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British Railways New Regional Boundaries

WHEN, on the nationalisation of the former main-line railway companies, it was decided that the State-owned railway systems of this country should be operated on a regional basis, it was realised that the original regions established could be only provisional and would be the subject of adjustment later. For practical purposes the original Regions followed very largely the lines of demarcation of the old main-line companies, with a separate region for the lines in Scotland and a split of the old L.N.E.R. system in England, into the Eastern and North Eastern Regions. From time to time since the beginning of 1948, when the British Transport Commission came into being, minor adjustments have been made and as from April 2 next, the Railway Executive, with the concurrence of the British Transport Commission, is making more widespread changes to the boundaries of the six Regions that now comprise British Railways. A list of the principal lines and stations involved is given elsewhere in this issue. The objective of these adjustments is the simplification of supervision, a reduction in administrative costs and the avoidance of unnecessary duplication. The lines involved are those which at present penetrate from one Region into the boundary of another and which, in the view of the Railway Executive, can with advantage be transferred to one or other of those Regions. Lines or stations which formerly belonged jointly to two or more of the former railway companies will now be placed under the administration of a single Region. Obviously changes of this kind have not been possible without protracted negotiations, for a number of interests necessarily are involved. Despite the new over-riding loyalty which it is sought to instil towards British Railways as a whole rather than to smaller units, such as districts or Regions, it is obvious that some heart-burning must have been occasioned in the transfers of considerable mileages between Regions. The trades unions also have been very interested parties in recent negotiations which have only just been concluded. It is interesting to note that each member of the staff concerned in the changes is being advised personally how he will be affected by the boundary adjustments. Official intimation of the revision of the boundaries was received as we are about to close for press, and some further details of the changes will be given in our next week's issue.

Engineers' Wage Claim Rejected

LAST week the employers rejected the claim by the Confederation of Engineering & Shipbuilding Unions on behalf of about 3,000,000 workers for a wage increase of £1 a week. The case for the men centred mainly on the contention that such a wage increase could be met from profits without increasing production costs and that the output per man last year was 33 per cent. higher than in 1946. These arguments were rejected on four grounds, first, because in claiming that the proposed increase could be met out of profits the unions had made no allowance for depreciation and maintenance and other important charges; second, wages since 1938 had risen by more than 100 per cent. while dividends and the like had increased only 44 per cent.; third, increased productivity could occur with little or no relation to the physical effort of the individual worker; and, fourth, hourly earnings amounted to 3s. 2·8d. against an average of 3s. in other industries. The employers maintained that, had the claim been met without involving any increase in costs, profits would have largely disappeared and many engineering concerns would have gone out of business.

British Investments in Argentina

THE extent to which Argentina has repatriated her railways and redeemed foreign debts by using the credits built up in London during the war is pointed out in a recent issue of *The South American Journal*. The small British investment in railways of £3,513,987 remaining in 1948 is now nil, after the 4½ per cent. first mortgage debentures of the Buenos Ayres Central Railway were paid off and the Cordoba Central Trust "B" stock reduced by 50 per cent. Total British investments in Argentina, which is now only third in the list of Latin American countries with which British investors are concerned, amount to £69 million, or a decrease of 21 per cent. on last year. On this, the average return has fallen from 3·8 to 3·4 per cent.; there is no return on nearly 50 per cent. of this capital, as compared with 43 per cent. in 1948. Government bonds outstanding total £5·6 million, with an average return of 4·1 per cent., and all receive interest as they have continued to do since 1938; even in 1934, of nearly £80 million Government bonds outstanding, less than 3 per cent. failed to receive a return.

Southern Region Punctuality

AMPLE evidence that the Southern Region is aware of the need for a high standard of punctuality has been shown by the success of efforts by Mr. S. W. Smart, Superintendent of Operation, to improve passenger and freight train timekeeping. Since 1945, there has been a continuous advance in punctuality, and we have had frequent occasion to comment on the high standard attained. In the latest figures available, which are for the four weeks ended November 5, 1949, the results for both steam and electric passenger services are good, but show a slight deterioration over those for the equivalent period of 1948. The falling off was chiefly due to fog, which prevailed on nine days, and a number of exceptional incidents also contributed. The timekeeping of freight trains,

however, made a useful advance on the previous year, and now shows a praiseworthy improvement over figures for the close of 1945. The latest results, compared with those of previous years, are shown below:—

AVERAGE MINUTES LATE ARRIVAL (WEEKDAYS)

	Four weeks ended				
	1945 Dec. 29	1946 Nov. 2	1947 Nov. 1	1948 Oct. 30	1949 Nov. 5
Steam	8·06	2·07	1·55	1·09	1·43
Electric	4·97	2·06	1·76	1·26	1·73
Freight	25·6	10·3	7·1	5·0	4·4

Higher Dock Charges Inquiry

ON Tuesday of this week the Transport Tribunal sitting as a Consultative Committee, began its hearing of the application by the British Transport Commission for an increase in dock charges. The inquiry into the application by the B.T.C. for an increase in railway freight charges concluded on January 20 after a hearing lasting eleven days. The present inquiry concerns about 70 docks owned by the B.T.C. which handle some 40 per cent. of all import and export goods. Since 1940, with the exception of one year, 1944, there has been a deficit on these docks, and the effect of the proposed increase would be to add £1,000,000 to dock and canal revenue in a year. For the B.T.C. it was stated that, though the increase if granted would wipe out the deficit on the docks which occurred before the allocation of central charges, actually the deficit on canals and waterways was £4 million. Though a revised estimate shows an increase in revenue, this is not expected to make a difference to the net increase for the next two years, owing to higher costs.

Future of Road Haulage

A SURVEY of the transport resources of road hauliers under private enterprise is being prepared by the Road Haulage Association to provide details of such resources as are now available consequent on the restrictions operating as from February 1. Recent estimates by the R.H.A. show the nationalised transport fleet to be not more than 40,000 vehicles at the present time and that about 120,000 long-distance vehicles are operated by private concerns. There are also about 700,000 vehicles operating on "C" licences for traders carrying their own goods. Another step has been the issue of a booklet giving members of the R.H.A. facts and figures about the industry and a summary of policy in the light of possible events in the near future. There is a reference to the road and rail liaison work between the R.H.A. and the Executives of the B.T.C. and the hope is expressed that such liaison will continue whatever the result of the General Election. With regard to the future, it is stated: "Definite proposals should be made for dealing with the special problems of the railways without handicapping other efficient forms of transport unnecessarily to the disadvantage of trade and industry in general."

Design of Transport Buildings

THIS year, the Royal Institute of British Architects is holding an exhibition early in June, dealing with the design of transport buildings in general. Collaborating on this occasion will be the Institute of Transport and various transport undertakings. Already the architect has made many valuable contributions to the design of buildings for the transport industry, but the organisers feel that, since 1939, though there has been technical progress, adequate attention to all aspects of the subject has not been possible. Therefore, partly because of the success of an exhibition it held in 1937, which dealt mainly with airport design, this year the R.I.B.A. has been encouraged to embrace a wider field, covering all forms of transport, rail, road, sea, and air, with the object of stimulating further interest in design. Exhibits will be drawn from abroad as well as from this country, and in this connection British Railways will be in a position to make a very valuable contribution in view of the projects for new stations and other buildings planned by the former main-line companies, some of which have since been completed and illustrated in these pages, and in view of further plans now ripe for development at an appropriate time.

Opening of the New Chiromo Bridge

ON January 17, Sir Geoffrey Colby, Governor of Nyasaland, opened the new bridge of the Nyasaland Railways at Chiromo, Nyasaland, which is described elsewhere in this issue. The first train to pass over the bridge after the ceremony was a mail train hauled by a new 2-8-2 locomotive named after the Governor. One of the chief problems confronting the contractors, the Cleveland Bridge & Engineering Co. Ltd., was the launching of the centre span over the Lower Shire River, which flows from Lake Nyasa to the Zambesi. It was not advisable to support it on staging in mid-stream in case the floods during which the original structure was carried away should recur. The span was therefore made ready on one bank, and one end of it floated out on pontoons to join the span erected on the south bank. To avoid interruption to goods traffic while the bridge was being built a temporary ferry service was instituted.

Signal Aspects in Holland

THE necessity for modernising signalling at certain stations and on certain sections of route resulted in the Signal Engineer of the Netherlands Railways, Mr. J. H. Verstegen, proposing a revised system of aspects based on the principle of indicating the permissible speed rather than the route set up, and adapted to work under continuous track circuit controls with the aid of the so-called "searchlight" type of signal unit. These new aspects were brought into service on October 23, 1949, between Utrecht and Driebergen, and at these stations and at Lunetten are seen the complete 3-speed aspects provided to govern traffic in interlocked areas. Their basic principle is somewhat similar to that long used by some American lines, in that for each speed there is a light seen on the signal post, but in this case red is seen only singly and never in combination with a proceed indication. When it is necessary for a signal unit to show a light merely to enable the position of the other light or lights to be recognised, the colour it exhibits is lunar white, the aspect then being regarded as "neutral" and of "marking" value only.

The Accident at Chester

BRIGADIER C. A. LANGLEY'S report on the collision at Chester Station on July 4, 1949, summarised in this issue, shows it to have been due to a train being admitted to an occupied platform line under permissive regulations by a calling-on indication, and being driven with insufficient care, something which forms an inevitable risk in such circumstances. Nowadays, we believe, calling-on arms are being correctly operated, in proper correspondence with the condition of the line ahead, but years ago at stations of this kind on the L.N.W.R. and even elsewhere, it was a common thing to see the calling-on arm lowered when there was nothing to prevent the proper running signal from being pulled off. In this case an electrical selector and track circuit gave positive control over the working of the main and subsidiary signal arms. Certain local conditions of site and methods of working combined to lead to the driver's failure to exercise greater care.

A 2,905-mile Railway Dieselised

ON October 15, 1949, the last steam locomotive was withdrawn from service on the Gulf, Mobile & Ohio Railroad, U.S.A., and its place was taken by a diesel-electric unit. While a number of minor railways in the United States have changed over from steam to diesel power, the G.M. & O., with a system whose route-mileage of 2,905 extends from Chicago to New Orleans, is the first major railway completely to dieselise its entire system. Originally a progressive line of limited extent in

the Southern States, the Gulf, Mobile & Northern, as it then was, acquired in succession three other railways; these were in such poor shape that the cost of bringing their tracks and bridgework to the standard necessary to carry heavier steam power would have been prohibitive. In 1945, therefore, when diesel power on the G.M. & O. was practically confined to a few passenger workings, the decision was taken to go over entirely to diesels, and, because of the lighter axle-loads of the diesels, much of the track renewal and bridge strengthening became unnecessary.

Pacific Locomotives for Western Australia

NEARING completion at the Hyde Park Works of the North British Locomotive Co. Ltd., Glasgow, are 35 locomotives for the Western Australian Government Railways, further details of which are given elsewhere in this issue. The engine frames have been designed to accommodate either plain or roller-bearing axleboxes, and the engine bogies, truck axles, and tender bogies of all the locomotives have been equipped with Skefko roller bearings; the last 16 locomotives have Skefko roller bearings fitted to the coupled axles. Walschaerts valve gear actuates 10-in. dia. piston valves, and steam power reversing gear of Hadfield design has been incorporated, mounted on a bracket attached to the engine frame. The boiler barrel is parallel and consists of two rings of an external diameter of 4 ft. 9 in. at the firebox end; all tubes are made of Aquacidox steel. The boiler has a Belpaire firebox with a steel inner box of all-welded construction. Rigid water space stays at the throat and top corners of the back plate are of Monel metal, while the stays in the firebox sides are of Longstrand hollow steel. A steam turret has been provided with the necessary valves for supplying steam to injectors, ejectors, steam reverser, and other equipment.

Railway "Capital Investment"

IN our last week's issue we dealt at some length with the problem which must face the railways as a result of Government policy in relation to the curtailment of capital investment and the interpretation of that term from a transport viewpoint. The current issue of *British Railways Magazine* also has a leading article on this subject which carries the discussion a stage further, although in our view it does not differentiate clearly enough between true capital investment and expenditure on renewals and so forth. The major criticism which must be levelled at present Government policy in this matter, so far as it affects the railways, does not lie so much in the curtailment of true capital investment as in the very wide interpretation of this phrase and its consequent inclusion of many works which are not only outside the ordinary meaning of the words, but are indeed essential day-to-day items of expenditure if ordinary efficiency is to be maintained.

The article in *British Railways Magazine*, although it does not make this point specifically, appears to be aware of it. It explains that each year, the capital investment programme on the railways has to be approved by the Government. Both 1948 and 1949 programmes were on a restricted scale and the 1950 programme is still further restricted. It seems clear, therefore, that the present curtailment of expenditure represents a cut on a programme which had already been pruned fairly severely. "All this means," says the article, "that British Railways are not able to develop and even maintain themselves as they wish. In 1950, for instance, we would have liked to build 40,000 much-needed wagons; we shall be able to build only 25,000. . . . The approved expenditure by the end of 1950 will be at an annual rate approximately £16 million less than the programme put forward by the Railway Executive for that year."

One of the most important reactions of the present Government policy must be that the inability to build new passenger carriages, wagons, and locomotives will result in the loss of improved efficiency and economy which otherwise would have been achieved. At the same time the railways will have to keep in service more than a corresponding number of worn-out locomotives, for example, with the additional heavy costs involved in their maintenance. At the present time about 400 new locomotives are necessary each year to ensure a sound condition of the stock. This would be equivalent to the rate of replacement carried out before nationalisation by the former main-line companies. There are plans for a substantial reduction in the stock of locomotives but this can become operative only as a result of improved use of the stock by the motive power departments and to a very large extent by improved design of new engines, which should result in reduced coal consumption, improved availability, and greater mileage between shopping. These three items obviously produce very substantial economies and so far as the reduced rate of investment postpones completion of the programmes, there must be an increase in working expenses and additional expenditure in repairing locomotives which otherwise would have been scrapped.

Somewhat similar considerations apply in the case of coaching stock, the provision of new units of which has been recognised as one of the most urgent needs of the railways. There is at present an absolute shortage, and the development of passenger business is being severely handicapped. In 1949 excursion fare passengers were only about two-fifths of the 1938 figure and a good deal of business had to be rejected because rolling stock was not available. Moreover ordinary passengers have been discouraged from travelling because the railways have not been able to provide seat reservations at times of peak travel and also because of the many very old coaches still in use. In wagons also the trend of condemnation and breaking up is well in excess of new building and the numbers of wagons under or waiting repair is still far too high.

The results of the present Government policy in the case of railways, if persisted in, must have the effect not merely of preventing a progressive expansion and increase in efficiency of the nationalised transport economy; it must result in putting back the clock towards the worst wartime conditions. In this connection it is relevant to remember that when the railways were nationalised there were large trust funds, well in excess of £100 million, which had been earmarked for deferred maintenance and renewals. Relatively little of this money has been used for this purpose, but much of the maintenance and renewal work which is essential to railways at the present time, but which under Treasury policy is to be curtailed, is very far from being anything in the nature of capital investment.

The re-laying, re-sleepering or re-railing of track is undertaken on the basis of strict necessity. At present the annual renewal programme of complete and partial renewals is about 2,000 miles. If that programme is reduced, in the current year the endeavour will be to make the economy on less important lines, but if curtailment has to be effected throughout next year and 1952, much more important considerations will arise. There will be real difficulties in maintaining traffic operation and almost inevitably there will have to be an uneconomic expenditure of man-hours on maintenance. Other permanent way work which may be affected by the economy measures, such as track maintenance, may easily result in the deterioration of the track formation and may well entail putting into force a number of speed restrictions and even dangerous instability in certain circumstances.

The maintenance and repair of a wide range of structures, such as bridges, stations and buildings, does not represent new capital investment but rather normal expenditure to keep in reasonable condition capital assets. If this expenditure is reduced or deferred, the probability of much greater expenditure in the future must be envisaged, as well as a decrease in the efficient usage of the assets during the period.

There are two primary aspects of the present position which deserve urgent consideration by the Government. The first is that the deferment of the efforts which the railways have made to overcome arrears in track renewals

and maintenance so that services can be improved, will be retarded and that this deferment must have an accumulative effect; the longer the repairs or renewals are put off the greater will be the cost. The second consideration is that the most practical way in which the railways could achieve a better financial position is by undertaking expenditure which will be remunerative, either in the attraction of greater revenue or in the provision of more economical operation. There is good ground for urging second thoughts on the so-called "capital investment" curtailment programme so far as it applies to British Railways. A more clear cut definition of capital would be a great help.

Groundnuts Scheme Transport

THE weakest link in the transport chain of the Tanganyika groundnuts scheme has tended to be local port facilities, according to Mr. Medwyn Ormerod, Transportation Manager, Overseas Food Corporation, in a recent paper* to the Metropolitan Section of the Institute of Transport. Railway capacity, he said, also was limited, thus putting a greater pressure on port transit storage. The railway was chosen as the basic means of transport to the coast, with terminal distribution by road except in certain cases. Roads in Tanganyika were undeveloped, however, despite the growth of a road-rail problem since the 1930's; rivers were mostly unnavigable, but lake steamer services provided an important feeder of the railways, and gave internal connection between the railways of Tanganyika, Kenya, Uganda, and the Belgian Congo.

Where railways had been built, said Mr. Ormerod, "spinal" development was evolved. The railway and feeder and connecting roads, and probably also a petrol pipeline, were first laid; then railheads were created, to each of which were conveyed by rail, successively, material for camps, land-clearing equipment and building materials, and the permanent community of agriculturalists with their machinery and supplies. He refers to the building of the Kongwa branch of the Tanganyika Central line, the new Southern Province line and port development, the projected north-south link between Kenya, Tanganyika, and Northern Rhodesia, and to rolling stock difficulties and other railway developments, all of which have been described in *The Railway Gazette*, notably in the issues of November 18 and December 16, 1949. The Southern Province line is relieved by a parallel oil-fuel pipeline from the coast. Of importance to the scheme are the 33-ton covered bogie wagons in course of delivery for the transport of nuts, and new tank wagons for carrying water. A single combined tariff is being prepared as a result of the constitution in 1948 of the East African Railways & Harbour Administration.

The congestion of the port of Dar-es-Salaam began in 1948-49, as an outcome of an increase in traffic amounting to three times the pre-war tonnage; it was not primarily the result of the groundnuts scheme, but was bound to interact with it. Remedial action included a local co-ordinating committee on which railway and other interests were represented, and a corresponding committee in London to regulate shipments. It had been successful, despite difficulties in controlling tonnage from overseas, and the existence of treaty obligations to accept traffic with the Belgian Congo *via* Lake Tanganyika. Long-term remedies included development of Dar-es-Salaam, in preference to the more costly movement of nuts from Central Tanganyika to Mombasa *via* the projected north-south railway, and also of the port of Mtwara.

Road transport had been used for long-distance traffic with the coast, more particularly in the earlier stages during a shortage of railway wagons, for tractors, and so on, and pending completion of the Kongwa branch. Air transport had been used largely for moving European employees and their families; the volume of air freight, such as urgently-needed spares, had been relatively small, space having been used in passenger planes. The main shipping problems had been the draught limitations of Tanganyika ports and the unusually large proportion of awkward loads.

Transport problems had arisen in Great Britain as a result of the scheme in the movement to British ports of equipment for East Africa. Third-party concerns employed by the Overseas Food Corporation had selected services on a normal commercial basis, much use being made of British Railways and of Road Haulage Executive services, and with regard to the latter "in the present rating-policy vacuum, negotiations with Divisions over charges are inclined to take on a distinctly empirical character."

Groundnuts at present were hauled by rail, bagged and in shell, from railhead storage to port. Future plans provided for shelling of nuts at railhead and movement in bulk in 30-ton end-tipping wagons of an interchangeable type suitable for other traffics. On arrival at port, they would be discharged into silos and loaded into ships by special mechanical equipment.

Parallel procedures were being devised for rotational and subsidiary crops such as sunflower seeds.

* "The Transport Problems of the East African Groundnut Scheme," a paper read to the Metropolitan Section of the Institute of Transport, February 6, 1950

Trans-Zambesia Railway

THE gross receipts of the Trans-Zambesia Railway Co. Ltd. for the year ended December 31, 1948, were £369,417, as compared with £338,472 in 1947, and working expenses were £332,122, against £282,320; after the addition of £20,719 interest on investments and bank deposits and provisions previously made but no longer required, payment of interest on income bonds, and meeting the service of 3½ per cent. first debenture stock, there was available £11,105 for interest on the 5 per cent. income debenture stock.

The following are some of the principal results:—

	1947	1948
Goods tonnage	190,283	197,686
Passenger journeys	132,968	130,337
	£	£
Goods receipts	252,258	287,277
Livestock and vehicle receipts	5,887	3,703
Passenger receipts	60,052	59,287
Parcels and baggage receipts	6,985	6,668
Gross receipts	338,472	359,417

In his statement circulated with the report and accounts, the Chairman, Mr. V. L. Oury, stressed post-war difficulties such as shortages of staff, housing for the staff, and stores and equipment of all kinds. Despite this, progress was made, including the delivery from Britain of powerful 2-8-2 type locomotives and of wagons; deliveries of passenger stock, however, were delayed. A four-year plan had been undertaken for improvement of the track.

Hitherto, traffics had come from Nyasaland and from the Colony of Mozambique, but on June 29, 1949, the Tete Railway was opened from Dona Ana (where it joins the Central Africa Railway, and thus *via* the Zambesi Bridge has access over the T.Z.R. to Beira) to Moatize, which opened up a third and potentially far more important source of traffic. The T.Z.R. had a working agreement and rolling stock pooling agreement with the Tete Railway. The new line would be the source of coal traffic from the mine at Moatize, new undertakings such as a cotton ginnery were served by it, and there were good prospects for cement, timber, and sugar.

The Port of Beira had been taken over on January 1, 1949, by the Portuguese Government, and the Beira Railway on April 1, both of which were now managed by the Director of Ports & Railways at Lourenço Marques, which was an important stage in the Government development programme for Mozambique. In May, 1949, the Portuguese Government convened in Lisbon a conference on Central African transport, attended by representatives of the British, South African, Portuguese, French, and Belgian Governments and by U.S.A. Government observers. The delegates undertook to recommend to their Governments a policy of co-operation in the development of Central African ports and transport on a regional basis. To this end, a plenary conference was to be held in Johannesburg in October, 1950, which, in addition to the Governments previously represented, should include delegates from Mozambique, Nyasaland, and other territories concerned.

Ulster Transport Authority

THE Ulster Transport Authority was constituted under the Transport Act (Northern Ireland) 1948, which became law on August 10, 1948, and on October 1 of that year the undertakings of the Northern Ireland Road Transport Board and the Belfast & County Down Railway Company vested in the Authority. An agreement had been negotiated earlier between the Northern Ireland Road Transport Board and the British Transport Commission, whereby the undertaking of the Northern Counties Committee section of the London Midland & Scottish Railway was transferred to the Board as from January 1, 1948, subject to the passing into law of the Northern Ireland Transport Bill. The undertaking of the Northern Counties Committee legally vested in the Authority on April 1, 1949.

Public transport in Northern Ireland has been causing concern since 1920. By 1935 the railway undertakings were in serious financial difficulties because of the unregulated and competitive services of road transport. In that year the Government introduced the Road & Rail Transport Act, but by September, 1939, the net revenue deficiency of the Northern Ireland Road Transport Board was in excess of £500,000.

During the war years the additional volume of traffic enabled both the Board and the railways to operate with a substantial net revenue. This disguised the steadily mounting costs arising from increased rates of wages and improved conditions of service of the staffs; the increasing costs of materials; and the excess of road and rail facilities. After the war the position again became serious.

It was against this background that the Ulster Transport Authority came into being. Brief mention was made in our last week's issue of the first annual report and accounts of that body. It was considered that the first essential was unity of control, and some details of the steps which the Board took to set up a common administrative headquarters are given elsewhere in this issue. The headquarters organisation of the Authority was given in detail in our April 2, 1949, issue. The management, under the Chairman and members of the Authority, is conducted by four Chief Officers—the Chief Comptroller, Chief Engineer, Chief Traffic Manager, and Chief Officer for Special Duties — each with functional responsibility for both road and rail functions.

The country organisation for commercial and operating purposes is based on a territorial division of the province into eight districts, each under a District Traffic Manager. Corresponding with these divisions and co-terminous with them are districts each controlled by a District Mechanical Engineer for the day-to-day maintenance of road freight and passenger vehicles as well as in certain areas control of some railway rolling stock and other maintenance.

An important achievement of the Authority has been the establishment of very good staff relations. It was realised that integration of road and rail undertakings and facilities would involve a merging of the staff so as to make its members available for work on either the rail or road side. This interchangeability calls for a complete re-cast of existing agreements, for if real interchange is to take place, it is essential that there should be standard conditions of service, common avenues of promotion and standard rates of pay. Trade unions representing the operating staffs have agreed in principle to interchangeability and a draft scheme is being prepared and is being discussed. The union representing the clerical staffs has already agreed to interchangeability, thus enabling the clerical staffs to be merged to a very considerable extent. After discussion with the unions, it was also agreed that the Authority should have complete freedom for the working of traffic so as to provide an economic and efficiently integrated service. The adoption of this principle might affect the volume of traffic flowing by either rail or road and therefore the number of staff at particular centres.

The report records the steps which led to the recent withdrawal of rail services on several sections of the Belfast & County Down Railway and the substitution of alternative road services for both passenger and freight traffic. It is considered that there is sufficient density of traffic to support the railway line between Belfast and Bangor, provided that the level of traffic is maintained and the costs are not further increased.

The position of the Northern Counties Committee Railway is under review, especially in regard to certain stretches of unremunerative lines. On the main line a good service is provided and special attention has been given to the long-distance traffic between Belfast and Londonderry. There has been an amalgamation or common user of wagon stock as between the Belfast & County Down Railway and the Northern Counties Committee Railway to conserve stock and save renewals.

Although the road freight side improved, the year's working resulted in an estimated loss of £93,128. The services provided are comprehensive, but the Authority has no monopoly of freight transport in Northern Ireland, for it operates under 1,000 goods vehicles as compared with some 16,000 lorries owned by manufacturers, merchants and farmers carrying their own goods, exclusive of what is handled by farm tractors and trailers and this figure is on the upgrade. No factors have arisen to alter the view that public freight transport in Northern Ireland cannot be economic so long as there is complete freedom to the trader in the operation of his own traffic.

The road passenger services carried a total of 9,462,839 passengers and ran 35,075,535 miles. "Limited stop" services, that is, express bus services between important centres, have been introduced and more are planned.

The net revenue position of the Authority as at September 30, 1949, was as follows:—

	£		£
Railway operations	Dr. 254,454		
Road passenger operation	Cr. 359,231		
,, freight ,, ...	Dr. 93,128		
		Cr.	11,649
Hotels and catering services		Cr.	4,384
Miscellaneous receipts		Cr.	36,270
Total		Cr.	52,303
Income tax		Dr.	43,259
Interest and sinking fund instalment		Dr.	159,119
Expenses in connection with winding up the constituent undertakings and the formation of the Authority		Dr.	14,863
Deficiency for the year			£164,938

This general net revenue position was foreseen, and has been due largely to the inability to deal effectively and, as it appears to the Authority, commercially with those parts of the undertaking involving heavy losses. These arose mainly on the Belfast & County Down Railway, and on that section amounted to £182,937.

The Authority has borrowed from the Ministry of Finance for capital purposes a total sum, during the year, of £6,627,000. This principal sum outstanding has been reduced by the sum of £1,500,000 as partial redemption authorised by Section I of the Exchequer & Financial Provisions Act (N.I.), 1949, leaving the net capital borrowings at £5,127,000. The net revenue position will deteriorate further until re-organisation gets into proper stride and the Authority is able to cope effectively with those stretches of railway lines that are not paying, and to measure up to those of its operations not yielding in their net results to the level of rates for the services given at current costs.

The Authority hopes that, by the end of three years, the corner may be turned, assuming that there is no serious slump in trade and consequent unemployment, and that prices generally and the level of salaries and wages remain reasonably constant. It is hoped before the end of this period the new scheme for the bases of rates and fares and conditions of carriage will have been brought before the Transport Tribunal, and that this scheme will reflect all the altered operating methods in the re-organised transport undertaking.

The Authority's staff of almost 11,000 operates and maintains 472 miles of railway track, 1,000 buses operating regularly over 2,517 route miles of roads, 1,000 lorries, 95 steam and diesel locomotives, 366 passenger coaches, 2,941 railway wagons, 5 hotels and 23 refreshment rooms, cafes, rail and milk bars, and restaurant-car services approximating to 1,000 miles a day. During the year it carried 104 million passengers, 2 million tons of merchandise and 721,000 head of livestock.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Cooper's Bridge Loading

January 30

SIR,—With reference to my letter dated January 16 and published in your issue of January 27 under the above heading, two errors have unfortunately been included. I regret that the typescript sent to you contained as the last heading for the last column "Uniform Controlling Load": no doubt your readers will have appreciated that this should have read "Uniform Trailing Load."

The telescoping of the letter "C" and the words "Uniform Load" in the diagram below the table have obscured the fact that the former applies to the four-axled tender and that the words "Uniform Load" were meant to describe the train load, the diagrammatic representation of which did not appear in print.

Yours faithfully,

F. W. ROBERTS

"Ashdown," Western Road, Billericay

London and Birmingham Train Services

January 29

SIR,—Correspondence in your columns on matters of day-to-day railway operation in this country is almost entirely critical, and therefore I feel that it is only fair to bring to your notice a praiseworthy pair of runs enjoyed recently on the London Midland Region.

Possibly over-wary through previous unfortunate time-keeping experiences on the London Midland Region, where often it has been wiser to travel hopefully than to expect as of right a punctual arrival at one's destination (our arrival at Euston on my previous up journey from Birmingham had been 53 min. late, through operating and not motive power causes), together with the fog which enveloped the Metropolis on January 25, I caught the 2.15 p.m. Birmingham train from Euston on that day without undue enthusiasm or optimism.

My fears deepened when a severe signal check occurred at Watford Junction followed by a diversion there to the down local line, along which we proceeded cautiously until Bourne End where we returned gingerly to the down main line again, six minutes late. We were still six minutes late at Tring when our rapidly increasing speed made it evident that our crew and steed (Rebuilt "Patriot" No. 45536 of Bushbury Depot) were keen to make amends; we passed Roade only three minutes late and after further energetic running swept through Rugby on time. Signal checks at Humber Road Junction prevented a spectacularly early arrival at Coventry, into which we drew cautiously one minute before time. The five minutes recovery time allowed between Canley Halt and Proof House Junction was certainly not required on this occasion, and without undue effort we arrived at New Street five minutes early: the net time for this journey, advertised publicly as 2 hr. 20 min., and shown as 2 hr. 15 min. in the working time-table, was 2 hr. 6 min.

Similarly, on the return journey the next morning on the 8.40 a.m. train from New Street, No. 45514, another Bushbury rebuilt "Patriot," despite prevailing fog and a check to a dead stand at Rugby to give precedence to a down main express crossing, effected arrival at Euston 4½ min. early. All credit to the Motive Power Department for these two excellent runs, and to the London Midland Region generally on that foggy morning for being able to display their Euston train arrival indicator with every up express marked "On Time." Living south of the Thames one is tempted in jocular manner to attribute this improvement to the northwards migration of numerous Southern Region senior officers since nationalisation!

Referring to the article on the Birmingham services in your issue of December 30, 1949, the runs recorded above show that it would be by no means impossible to restore two-hr. timings to and from Birmingham (if not 1 hr. 55 min. again), and so decrease the present 17 per cent. addition to the 1939 journey time. I feel that the opportunity should be taken of rationalising the Euston and Paddington departure times, for the present close proximity of the 11.10 a.m. from Paddington and 11.25 a.m. from Euston, the 2.10 p.m. from Paddington and 2.15 p.m. from Euston, and the 4.10 p.m. from Paddington and 4.30 p.m. from Euston, with no departures from London between these three groups, is a weakness in the service and a source of complaint by both London and Birmingham business men.

British Railways are restricted at present by the Government curtailment of capital expenditure, and it is difficult to propose immediate train service improvements which can be effected without undue expense. However, when the relaxation of this restriction comes about and the degree of spending necessary to maintain the national railway system at the desired peak of efficiency is restored, I think it will be worth considering the integration of the London-Birmingham services by running all Birmingham trains to and from Marylebone (where track capacity permits), at regular hourly intervals from approximately 7 a.m. until 10 p.m.

Trains would run alternately (i) *via* Neasden Junction, Northolt Junction, and thence *via* the existing G.W.R. route to Snow Hill, and (ii) *via* either the Aylesbury or the High Wycombe line, Grendon Underwood Junction, Woodford, Rugby, and Coventry (this city's requirements should not be overlooked) to New Street. The hitherto unsurmounted difficulty of making a running connection between the G.C. and L.N.W. lines at Rugby should be boldly overcome in such a way as to keep the Birmingham trains clear of main line traffic. The service would thus be evenly spaced, and from a single London terminus, the claims of intermediate points on both the present routes such as Leamington and Coventry would not be prejudiced, and congestion on the old L.N.W.R. line south of Rugby would be relieved.

Yours faithfully,

R. A. SAVILL

16, Box Ridge Avenue, Purley

Railway Fares

January 1

SIR,—At times one finds it a little difficult to follow Mr. Roberts's line of argument. In his letter on "Railway Fares" in your issue of December 30 last (and others) he seems to admit the necessity of knowing the financial position and yet he seems to object to accountants, whose job it is to prepare the figures. It would be interesting to know why he seems to consider that they alone do not know their job.

From his letter he does not seem to be aware that tickets are dealt with on corridor trains over here, although this may apply more to longer distances than to locals. The evasion and attempted evasion of fares and other dues is not peculiar to railways or this country; the practice is as old as the hills.

He says that guards' vans are not used (except by the guard himself). One has yet to see or hear of these not being used for the purpose for which they are provided. At times the guard has some difficulty in getting himself into his van!

It is agreed that common sense and enterprise are needed to capture and recapture traffic. For the moment one does not quite see what the number of passengers carried by road has to do with the increase in traffic required today to make a lower rate pay. One hundred years ago or more the railways took the traffic off the roads, from the stage coach; now the motor is taking (has

taken, if you like) the traffic back to the roads. It is up to the railways to maintain their position; abusing someone else won't help. The question is what to do about it.

Yours faithfully,

COURTENAY BARRY

The Old Manor, Salisbury

More Trains and Reduced Fares

January 15

SIR,—The news of the experiment between Sunderland and Hetton of considerable improvement in train service combined with fare reductions, reported in your January 13 issue, is gratifying to those of us who believe that the only hope for the recovery of our railways lies, not in improved train services or reduced fares, but in both simultaneously.

May I express the hope that this experiment shall be given a fair trial as, due to the mistaken policy of the railways since the first war, the public has largely been driven on to the roads and is bound to take some time to realise that, with improved facilities, the railway can be not only as good, but frequently better. Let us hope that when, as I hope and believe, this experiment proves a success, it will be gradually extended, and lead eventually to the great desideratum, reduction of the basic fare.

I should like to urge the importance of adequate and prominent display of timetables and of such cheap fares as exist. This is frequently not at all good at many stations; I recently made a return journey at a fare considerably under 1d. a mile, the existence of which I discovered only by enquiry at the booking office. I also believe that it would be of great value to display such information in prominent positions in towns and villages, especially when the station is not centrally situated.

Yours faithfully,

M. D. GREVILLE

Church Hayes, Belstone, Okehampton

1948 Locomotive Exchanges

January 14

SIR,—The recent correspondence in your columns on this subject has largely been centred on Mr. Bulleid's "Merchant Navy" and "West Country" Pacific locomotives, and, although acknowledging the fact that these machines have their deficiencies, one cannot avoid the conclusion that Mr. Maxwell, in particular, in your issue of December 23, has made a number of sweeping criticisms which are hardly justified by facts.

The claim that the Southern Pacifics are excessively heavy on coal seems to be an overstatement, as, on the exchange trials, the coal consumed per d.b.h.p.hr. averaged 3·57 lb. for the Western Region "King" and 3·60 lb. for the "Merchant Navy"; the water consumptions being 28·58 and 30·43 lb. respectively. The "West Country" figures of 4·11 lb. for coal and 32·64 lb. for water were certainly higher than those of 3·94 lb. and 29·97 lb. for the "Hall," although these are to some degree explained by the brilliant work of the S.R. engine, even allowing for its increased weight and power. Although the S.R. figures do not compare well with the 3·06 and 3·12 lb. of coal per d.b.h.p.hr. for the Gresley A4 and Stanier "Duchess" Pacifics it must be recalled that the latter machine was generally run easily uphill to keep the coal consumption down, and time was recouped by fast work on falling grades.

The Southern Pacifics certainly suffer from slipping troubles at starting, unless carefully handled, but these difficulties seem equally to beset the latest Eastern and London Midland Region locomotives of the same type. The adhesion weights of 67·1, 66·0 and 63·0 tons for the London Midland Region, Eastern Region, and "Merchant Navy" Pacifics are in close correspondence, and the "West Country" adhesion weight of 56·3 tons gives a roughly equal adhesion ratio in proportion to its smaller starting tractive effort.

Given competent handling, however, there is no reason to assume that the Southern 4-6-2s would compare badly with those of the Eastern and London Midland Regions if called on to handle their normal workings. During the Kings Cross-Leeds tests I saw the "Merchant Navy" 4-6-2 start her 530 tons or so of train out of Kings Cross on two occasions without an atom of slipping; the first occasion was dry, the second was in steady drizzle, and on both, this heavy train had to be started from No. 5 platform, round the sharp curves and crossings necessary to reach the down main line into Gas Works Tunnel. On the Salisbury-Exeter route, with its long ruling grades of 1 in 80 and 1 in 100, the "Merchant Navy" locomotives have hauled loads of up to 650 tons gross, with which time has been kept or gained.

I cannot think of any gradient on either the East or West Coast routes, other than the ascent of Beattock from the south, which provides a stiffer test of locomotive ability than Seaton bank, averaging about 1 in 90 for seven miles. On this incline the "Merchant Navy" locomotives have taken up to 650 tons trailing and up to 550 tons from a standing start at Seaton Junction, which seems to prove that with capable handling the slipping difficulties are not insurmountable.

When the smaller "West Country" Pacifics were introduced these were found capable of restarting with a trailing load of 255 tons on the 1 in 36 gradient of Mortehoe bank, which is steeper than Hemerdon, on which the Western Region "Castles" of similar tractive effort are allowed 315 tons.

I fully share Mr. Maxwell's admiration for the work of the Western Region "Kings," which he enthusiastically mentions, particularly their magnificent pre-war work on the difficult Birmingham route, but I feel that, from published performances, the "Merchant Navy" Pacifics, with their streamlined steam passages and exceptional boiler capacity, aided by thermic syphons, could equal, if not surpass, the best work of the "Kings," except, possibly, in starting. One might, however, well doubt the ability of a "King" to equal some of the brilliant "Merchant Navy" performances mentioned in Mr. Cecil J. Allen's book, "Locomotive Practice and Performance in the Twentieth Century," in particular the feat of covering the 73·3 miles from Wilton to Sidmouth Junction at a start-to-stop average speed of 58·7 m.p.h. with 575 tons trailing on the "Devon Belle."

Although the S.R. Pacifics, the "West Country" in particular, did not shine greatly in their coal and water consumptions per d.b.h.p.hr. in the exchanges, they did demonstrate in no uncertain fashion their tractive capacity and general ability to maintain end to end schedules in spite of running and station delays, which cannot be other than to their credit. Hard running of this nature should not, with a modern design, increase the coal and water consumptions per d.b.h.p.hr. appreciably, provided it does not extend the boiler beyond its optimum steaming range, but some of the work of the "West Country" engines in the tests was so exceptional that the boiler efficiency may have been lowered, thereby explaining the higher coal and water consumption when compared with the "Merchant Navy" engines during the exchanges.

Finally, I feel that the strictures passed on the "Leader" class locomotives are a little premature, in view of their radical departure from established practice in many respects, which makes the occurrence of teething troubles understandable. In the bold originality of this design Mr. Bulleid has, for the first time in a British steam mixed-traffic locomotive, tackled the problem of inadequate adhesion under adverse weather conditions by substituting for the normal rigid frame design the double-bogie type, enabling the full weight of the locomotive to be used for adhesion. It is to be hoped that these revolutionary machines will be persevered with and will achieve greater success than the unfortunate Paget locomotive, which might have had a great influence on British locomotive practice had it not been consigned to the scrap heap in secrecy and haste.

Yours faithfully,

GEORGE W. CARPENTER

6, Oak Villas, Manningham Lane, Bradford

THE SCRAP HEAP

Light-Fingered

Belgian railway passengers stole 5,000 carriage lamps and 35 fuse boxes last year and caused 205 train blackouts.

Locomotive "At Homes"

There were 46,736 visitors to the 125 locomotive sheds on British Railways, London Midland Region, during the last 12 months; the figure is a record. Londoners headed the list—20,389 of them went to Willesden, Cricklewood, Camden and Kentish Town sheds.

Service

Four people waited in vain at Thaxted Station, Essex, on February 7, for the 9.55 a.m. (a 51-year-old engine and two coaches) to start on its 6½-mile journey to Elsenham Junction.

Time marched on, but the 9.55 did not; the veteran engine had gone out of action and no amount of tinkering could get it to move. But Eastern Region rose to the occasion. The service must go on, said the officials. A taxi was rushed to the station, the passengers were transferred to it—and Elsenham Junction was made on time. —*From the "News Chronicle."*

An accountant, of Burstwick, East Yorkshire, leaves his home every day at 8 a.m. and walks to Tye Hill Station to catch a train to get to his office in Hull. As he approached the station on February 3 the train was pulling out two minutes early according to his watch. He telephoned the railway telegraph office and checked his watch. It was right. He then spoke by telephone to the railway control room, told them that their train had left early, and that the next train would not get him to his office on time. He was asked to wait 20 minutes. A car arrived and he reached Hull only a few minutes late.—*From "The Times."*

Scottish Christmas Trees

The Christmas tree exhibitions on behalf of charitable organisations, which were featured by the Scottish region at a number of its principal stations during the festive season, met with a generous response from the travelling public. Contributions at the exhibitions reached the total of £1,648 5s. 2d. in cash, as well as 5,439 books and other gifts. Among the stations taking part, Glasgow (Central) contributed some £383 and 1,292 gifts; Aberdeen some £248 and 761 gifts; Dundee (West) some £203 and 924 gifts; Edinburgh (Waverley, West End) some £123 and 1,420 gifts; Edinburgh (Princes Street) some £231 and 589 gifts.

Light Railways Lament

The rapidly shrinking band of wheezily ancient light railway engines must be creaking with dismay at the news that the Sheppey Light Railway is to close down shortly. The death-roll among these souvenir pocket railways is getting heavier and heavier. The giddy Welsh Highland Railway, the sleepy Blyth Valley line from Southwold to Halesworth, the curvaceous line running through the clotted-cream country between Lynton and Barnstaple, the once-Ducal line from Quainton Road to Brill, in Buckinghamshire, and the Cleobury Mortimer-Ditton Priors railway (12 miles in 78 exciting minutes) are among the lines that are fast becoming the memories of an older generation.

What the pre-war bus maimed, "integration" and "co-ordination" (blessed words!) are now killing. Very few of these vintage systems remain. But, surprisingly enough, within fifty miles of London the "Crab and Winkle" railway between Tollesbury and Kelvedon still whispers the last enchantments of Victorian locomotion amid the Essex salt-flats, while the antique trains of the Kent and East Sussex line, chuffing sedately on their way between Robertsbridge and Headcorn, carry yet their fallen top-hat day about them.

Nevertheless, they seem doomed: what a darkness lies already behind the blank columns of *Bradshaw* inscribed with the romantic shades of Towyn, Rhydyronen, Bryn-glas, Dolgoch, and Abergynolwyn!—*From "The Manchester Guardian."*

Warm Work

A Liverpool suburban train traveller called at the booking office one very cold morning, and, in asking for his ticket to town, solemnly requested that it should be a warm one. The clerk date-stamped the ticket, then, with equal solemnity, carried the ticket over to the fire and warmed it on both sides before handing it over.—*From the "Liverpool Daily Post."*

The Old Chief

Whatever changes nationalisation has brought to the British Railways there are engine drivers who do give "two hoots" for the old times—as personified by Sir Felix Pole, former General Manager of the Great Western Railway.

Today (February 1) was his 73rd birthday, and old-timers among the engine drivers on the main Paddington-West Country line which runs by his home at Calcot, near Reading, gave greetings by tooting on the locomotive whistles. They have kept up this friendly habit for many years.—*From "The Evening News."*

Alice in the Marshalling Yard

(Scrap railways and let road transport use the tracks.—Daily Press)

The Shunter and the Yardmaster
Were walking to and fro;
They'd worked like anything to keep
The wagons on the go
And both were most indignant with
The *Daily So-and-So.*

"If road transport took charge today
"And worked for half a year,
"Do you suppose," the Shunter said,
"They'd ever keep it clear?"
"I doubt it," said the Yardmaster,
And shed a bitter tear.

"For every train that we send out
"A thousand tons may weigh;
"How many lorries, should you think,
"That would require each day?
"A hundred lorries to each train—
"Two hundred, shall we say?"

"Two hundred lorries in and out—
"Think of the men to pay,
"Compared with one train-crew of three—
"What would the Staff Clerk say?
"And that is only for one train,
"At one yard, in one day!"

"Well, in that case," the Shunter said,
"To me its very plain
"'Twould be a foolish thing to try
"Competing with a train."
"How true!" replied the Yardmaster,
And cheered up once again.

A. B.

"Lost your ticket, have you? Do you expect me to believe that?"

"Why not? I believe the railways when they lose money"

[Reproduced from "The Evening News"

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Angelo Marshalling Yard

Most of the coal produced at the Transvaal collieries of Witbank and Breyten is sent to Angelo, where one of the busiest marshalling yards in the country operates to assemble and despatch this traffic to the ports for shipment or to various parts of the Union for local consumption. All this coal traffic has to pass through the East Rand junction of Apex on its way to Angelo, and it is mainly to relieve congestion at Apex that the new line connecting Springs and Welgedacht is being built.

Of the heavy coal traffic, averaging about 50,000 tons a day, which passes through the Angelo yards, nearly 80 per cent. is for local distribution within the Union. In addition to the forwarded traffic, Angelo handles a large number of empty wagons which are constantly being returned to the coalfields. The existing facilities having been found inadequate, it became essential to enlarge the yard.

Construction of the new yard is being carried out in three stages, the first being the provision of better crossover facilities between the up and down yards; the second consisting of the repositioning of the existing down yard facilities; and the third stage comprising the laying of twelve tracks for the acceptance and marshalling of traffic, together with four departure tracks and other incidental buildings and tracks.

The first two stages of the programme have been completed and work is now proceeding on stage three. As each track is laid it will be brought into service. It is expected that the track-work at present in hand will be completed by the end of March, 1950.

With more wagons available, coal production in the Transvaal reached new high levels in August last. The total amount of coal hauled was 1,553,525 tons. Returns for the first five months of the current financial year reflect the improvement that has taken place. In this period Transvaal collieries despatched 7,186,423 tons, showing an increase over the corresponding period of the previous year of nearly half a million tons. Local coal consumption amounted to 4,733,158 tons, coal for shipment 498,244 tons, while the remainder was coal used throughout the country for railway purposes.

Road Motor Services

Railway road motor services now operate over more than 25,700 route-miles exclusive of the tourist services begun with the luxury motor coaches imported from Canada. Since the end of the financial year 1948-49, new services totalling 963 miles have been introduced. A route-mileage of 526 miles was withdrawn because of lack of support. The introduction of new services has conformed to the policy of encouraging agricultural development by providing transport between outlying areas and the nearest railway. In South-West Africa, for instance, Gobabis is now the centre from which radiate services covering 343 route miles.

Light vehicles have been replaced by heavier types and their introduction has led to a reduction in vehicle-mileage of 3,637,817 and an increased trailer-mileage of 1,734,027. Since March 31, 1949, 68 goods and 41 dual-purpose vehicles have been placed in service, bringing the total number of motor vehicles to 1,043, and the number of trailers to 621. The principal increases are in passenger vehicles; and in goods and dual-purpose vehicles of 10-ton, 8-ton, and 7-ton capacity. It is expected that a further 100 new vehicles will be added before the end of the present financial year. The capital value of vehicles and equipment at present exceeds £3,600,000.

Although some classes of seasonal traffic have shown an upward trend, others have been affected by the serious drought in parts of the Cape Province and the Orange Free State. The total quantity of goods conveyed dropped from 1,888,071 tons in 1947-48, to 1,806,354 tons in 1948-49, and cream from 2,808,867 gal. to 2,724,164 gal. In spite of the falling off in traffic, the loss sustained by the road motor services was reduced from £553,049 in 1947-48, to £307,969 in 1948-49, due largely to the introduction of the heavier vehicles.

Coal train hauled by Class "15 F" locomotive at Apex Station, en route from Witbank to Angelo Yard, South African Railways

RHODESIA

Financial Results

Receipts for the seven months ended October 31 last totalled £5,835,196 and showed an increase of £795,185 compared with the corresponding period of 1948. Expenses for the period amounting to £4,494,530 are £626,604 more than in 1948, leaving a net operating revenue of £1,340,666 which was £168,581 more than last year. Revenue records achieved during October, 1949, included £554,121 for general goods and £158,750 for mineral traffic.

Operating Features

Train-miles totalled 669,150 during October, gross ton-miles being 426,128,000, and net-ton miles 194,700,000, record figures. Tonnage carried amounted to 466,314 and included 207,487 general goods.

Coal, Coke, and Copper Haulage

Coal and coke hauled to the copper mines during the seven months ended October 31 last increased by 13,806 over the corresponding period of 1948. The increase in copper hauled during the period was 37,491.

Victoria Falls Hotel

The Victoria Falls Hotel, which is managed by the Rhodesia Railways, is being enlarged to provide 24 additional bedrooms, each with a bathroom. Provision has also been made for a conference room to meet an increasing demand by municipalities and other bodies. A semi-circular lounge is to be added to the existing lounge, and the dining room will also be extended.

For some time, and especially since the inauguration of the B.O.A.C. flying-boat service in 1948, the capacity of the hotel has been taxed to the utmost, and many prospective visitors have been turned away. During

the last financial year 153,983 meals were served at the hotel, or 15 per cent. more than in the preceding year.

UNITED STATES

Rock Island Suburban Line

On November 21 last, the Chicago, Rock Island & Pacific Railroad introduced a new suburban diesel-hauled streamline train on the Joliet-Chicago section. It consists of seven coaches, and will run on the "Bankers' Special" 7.37 a.m. service from Joliet, a season-ticket train. It is being worked by one of the 12 new 1,500-h.p. diesel-electric locomotives specially designed for this and similar suburban services.

The new stock consists of 85-ft. central-gangway cars each seating 102 passengers. There are two double doors and steps up to them on each side of the car, with pneumatically-worked doors. In all, 20 of these cars have been delivered from the Pullman-Standard Manufacturing Company, twelve of them air-conditioned and eight having forced-air ventilation. Four of the air-conditioned cars have lavatory accommodation, and one of these will be included in each train on the Joliet service, which covers 40 miles. Equipment includes all-coil spring bogies, roller bearing axleboxes, snubbers and shock-absorbers, and electric brakes.

CANADA

Demands of Unions

Demands of two railway unions, representing 35,000 non-operating employees, for wage increases, shorter working week, and "union check-off" were presented to a board of conciliation in Montreal and replied to by the railways.

The union brief was presented by Mr. T. McGregor, Chairman of the joint negotiating committee for the Canadian Brotherhood of Railway Employees and other transport workers and the Brotherhood of Express Employees, both affiliated to the Canadian Congress of Labour. The railway case was presented in a statement read by Mr. R. C. Johnston, Assistant Vice-President, Personnel, Canadian National Railways.

The unions seek a general wage increase of 10 cents an hour, the 40-hr. week, as against the present 48-hr. without loss of take-home pay, and the "check-off" system or deduction of union dues from wages. The railways say that the average weekly wage of non-operating employees is higher than that in manufacturing industries and that wage increases to non-operating workers in the last four years have outstripped the rise in the cost of living.

The unions described the shorter working week as "consistent with technological progress" and in line with the "rapid trend" in other industries. They contended that the "check-off" had frequently been upheld by jurists and recognised authorities in labour-management relationships. The companies replied that the compulsory "check-off" where union dues are deducted from pay of employees whether union members or not "is an invasion of the liberty of the individual and would tend to give the union enjoying it monopolistic and undemocratic powers."

JUGOSLAVIA

Belgrade Avoiding Line

A comprehensive scheme of reorganising the railways of Belgrade is being carried out. The first stage is the building of a standard-gauge avoiding line south and south-west of Belgrade to connect the Nish-Belgrade main line with the Belgrade-Zagreb and Belgrade-Subotica main lines.

It will leave the Nish-Belgrade main line at Kijevo, 7½ miles south-east of Belgrade and, turning westwards, pass under the hills south of Belgrade in a tunnel 4,986 ft. long to near Zeleznik, on the narrow-gauge line leading from Belgrade along the southern bank of the River Sava to Obrenovac and then turning south into western Serbia. This line is the northernmost section of the narrow-gauge Belgrade-Sarajevo route *via* Cacak and Titovo Uzice used before the war by the first diesel train in the country, known as the "Mad Sarajevan." It is probable that the line will be converted to standard-gauge at least between Belgrade and Obrenovac, where there is an intensive suburban traffic.

The new line will run westwards from Zeleznik to Ostruzhnica and cross the Sava by a bridge, 2,204 ft. long and partly completed. Running due north from the bridge it will join the Belgrade-Zagreb main line at Zemun Novi Grad Station, 6¼ miles north-west of Belgrade; there, connection will also be made with the main line for Subotica (and thence for Budapest). There will be intermediate stations at Rakovica, Dushanovac, Ade Huje, and Makish. The building of the line, including work in connection with Kijevo Tunnel and the Sava bridge, was begun in December, 1948.

The railway will be of importance for the outer-suburban traffic of the rapidly-expanding city, but its main value will be in easing congestion of traffic at the goods stations and yards of Belgrade, which has become so serious that it has proved necessary to decentralise the goods traffic by installing temporary marshalling stations for the transit traffic outside Belgrade.

Stations in Belgrade

The present temporary main station in Belgrade, built to replace the old station destroyed during the war, will be replaced in turn by a modern station in the old part of the town south of the Danube, and another station in the new part of Belgrade, both to be connected by a reinforced concrete bridge over the Danube carrying two tracks. The bridge will be 6,560 ft. long. The main line from Nish will reach the new southern station by a tunnel underneath the hilly quarters of the city. The site of the present main station will be converted into an extensive park. Preliminary work for the carrying out of this scheme is already in hand.

Oil-Burning Locomotives

Oil-burning is to be adopted gradually for a number of main line locomotives of the State Railways. According to a recent official information, the conversion from coal to oil fuel began in December and is being carried out in various depots in the areas nearest to oilfields.

ROUMANIA

Agreement with Jugoslavia Repudiated

It is stated that the railway agreement concluded with Jugoslavia on September 3, 1946, concerning the transit of Jugoslav trains through Roumanian territory has been repudiated. It is not known whether the transit of Roumanian trains through Jugoslav territory has also been affected.

There are two services connecting both countries. One between Belgrade and Bucharest *via* Pancevo, Zrenjanin, Kikinda, and Jimbolia. Second class and third class through carriages work over this route between Belgrade and Iasi, on the Soviet Union-Roumanian frontier. The other connects Bazhias, on the Danube, and Timisoara.

A third line linking the two countries, between Jasha Tomic and Cruceni, has no through service.

GERMANY

Railcars between Bonn and Berlin

Negotiations are reported to be in progress between the Federal Railways and the Railway Administration for Eastern Germany with a view to the introduction of an express railcar service between Bonn and Berlin.

Locomotive Orders

A locomotive order recently placed by the Federal Railways is for 22 steam locomotives to be built by Krupp at Essen. If the expected additional credits are forthcoming, locomotive orders are also to be placed with Krauss-Maffei, Munich, and with Maschinenfabrik Esslingen, of Esslingen (Württemberg).

München-Gladbach Station

A new station building at München-Gladbach on the Cologne-Kaldenkirchen-Amsterdam main line is nearing completion. The first two of the station waiting rooms were opened to the public at the end of 1949. München-Gladbach, 36 miles north-west of Cologne, and 16 miles from Kaldenkirchen, the German frontier station, suffered heavily from air raids because of its importance as a junction of a main line connecting *via* Dusseldorf with the railway system in the Ruhr.

Ulster Transport Authority

Headquarters and workshops designed for integrated working

WHEN the Ulster Transport Authority came into being, one of the first obvious requirements was the provision of adequate accommodation for the headquarters administrative staff. The headquarters staff of the former Northern Ireland Road Transport Board was housed in various rented properties in the centre of the city, while those of the Northern Counties Committee and Belfast & County Down Railways occupied offices at York Road Station and Queen's Quay Station respectively.

A five-storey building was purchased and converted into offices for the headquarters administrative staff. The policy in acquiring and adapting these new premises was governed by four considerations—convenience for the public; healthy and suitable conditions for the staff; integration of management; and economy in working.

This building is centrally situated in Linenhall Street, near the City Hall. The building previously had been used as a linen warehouse, with only a small part of the ground and first floors as offices. Building control restrictions had considerable effect in determining the materials used and the methods of construction in converting the building into offices. The partitions used on the first floor are of plastic construction with a wood veneer, in this case mahogany. The remaining floors have double-side steel partitions with glazed upper panels. These steel partitions have been treated to prevent "drumming" and the glazing is of heavy glass, mounted in rubber. On each floor the partitions are painted a distinctive shade. Hardwood strip floors have been superimposed on the rough floor planking, the strip flooring in the corridors being laid longitudinally.

In designing the layout of the new offices for the convenience of the public and efficiency in working, the enquiry office was sited on the ground floor convenient to the front entrance. Most of the general public will not require to proceed beyond this room.

The Board Room and the offices of the Chairman, Secretary and Chief Officers are on the first floor, except for that of the Chief Traffic Manager which is on the second floor near his staff. The general design of the rooms on this floor is simple: the walls are of mahogany-veneered plastic partitioning up to 8 ft. and cream plastic above that height. The Board Room has a false wall of plastic partitioning inside the outer wall of the building, and all service pipes and conduits are concealed behind this.

In addition to the Chief Traffic Manager, the Freight Manager with his staff and the Secretary's staff are on the second floor; the Accountant and Passenger Manager and their staffs together with the Rates and Fares staff are on the third floor.

The internal organisation of the offices is of interest. For example, under the general scheme of co-ordination of rail and road services, staffs are integrated. The result of this is, for example, that the Traffic Planning Section is in a position to produce combined rail and road timetables and to frame arrangements in connection with special events in the knowledge that the best use has been made of both forms of transport. This also applies to the Rates & Fares Department.

The fourth floor is occupied by staff concerned more with the internal work of the Authority than with the public, such as Rolling Stock Control, Engineering, and Staff Administration.

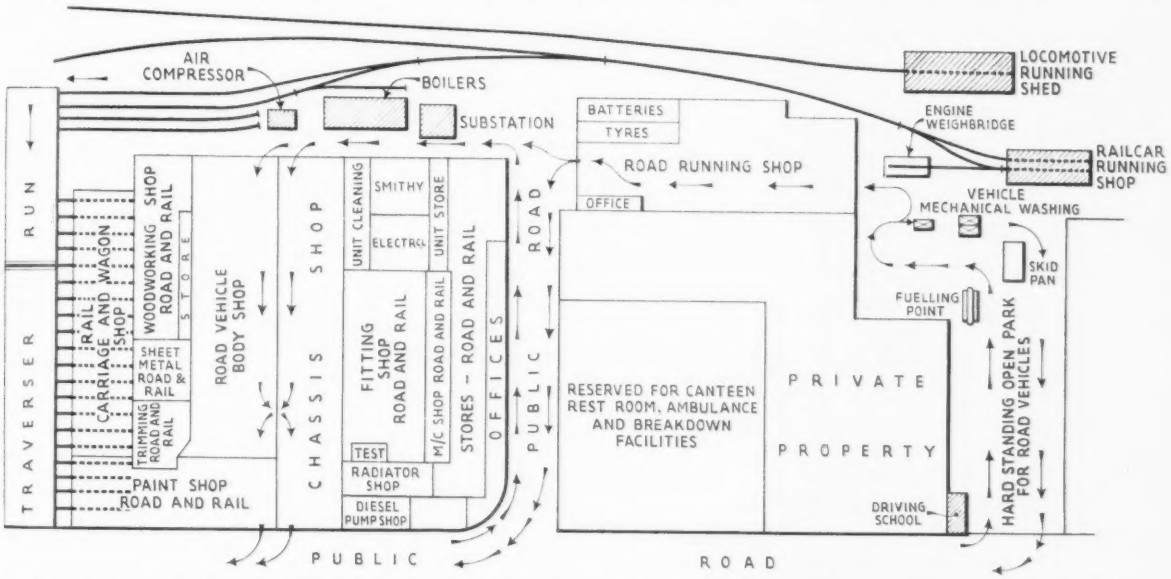
The fifth floor was added as part of the reconstruction and occupies what was formerly roof space. On it is the staff canteen with a well-equipped kitchen and service counter.

Combined Road-Rail Workshops

The workshops on the railway side, and still more so on the road side, were found to be inadequate. It became imperative, therefore, to provide new combined workshops. A suitable site was found on property belonging to the Northern Counties Committee at Duncrue Street, and, by the acquisition of some adjacent land, space for a new factory was made available, including proper running maintenance facilities and parking ground.

The aim in this scheme is to bring all the dispersed elements of mechanical engineering together, apart from locomotive renewal and repair and the manufacture of new bus bodies, thus giving the maximum control and providing for a measured, flexible and economic output. It is thought that these workshops are the first specifically designed for combined road and rail engineering work.

At the Dunmurry shops, in addition to new bus bodies, railway coaching stock and road freight vehicles are being built.



Plan showing the layout of the new combined rail and road engineering shops of the Ulster Transport Authority at Duncrue Street, Belfast, which covers about seven acres (*see also page* 163)

The New Chiromo Bridge, Nyasaland

A span weighing 320 tons launched on pontoons from one bank of the river

A NEW bridge carrying the Nyasaland Railways over the Lower Shire River, at Chiromo, Nyasaland, has now taken the place of the former structure which was destroyed by floods.

The Lower Shire River is the sole outlet from Lake Nyasa, the third largest lake in Africa. Exceptionally severe rainy seasons in recent years have resulted in abnormal rises in the level of the river.

The channel of the river is filled with sudd, or thick underwater growth, and at times of flood, the waters tear this away to such an extent that the river becomes choked with the floating vegetation.

In March, 1948, the water rose so high that the sudd, which at first clung only to the bridge piers, piled up and became firmly wedged against the

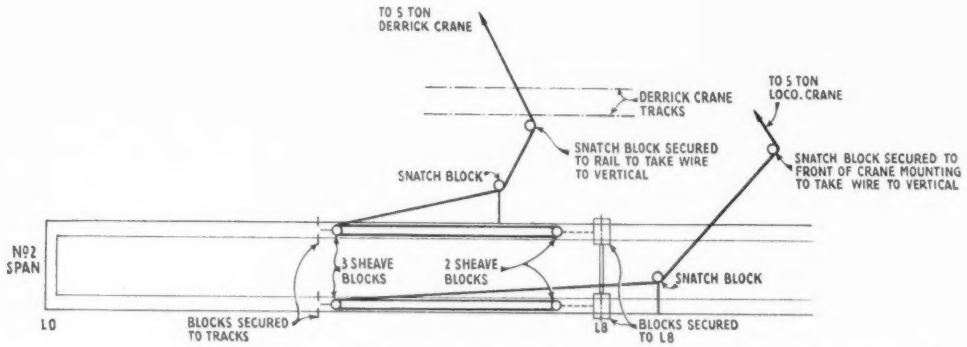

TO 5 TON DERRICK CRANE
DERRICK CRANE TRACKS
TO 5 TON LOCO. CRANE
SNATCH BLOCK SECURED TO RAIL TO TAKE WIRE TO VERTICAL
SNATCH BLOCK SECURED TO FRONT OF CRANE MOUNTING TO TAKE WIRE TO VERTICAL
SNATCH BLOCK
Nº2 SPAN
3 SHEAVE BLOCKS
2 SHEAVE BLOCKS
SNATCH BLOCK
L0
BLOCKS SECURED TO TRACKS
L8
BLOCKS SECURED TO L8

Fig. 1—Layout of hauling gear for moving span into position for launching

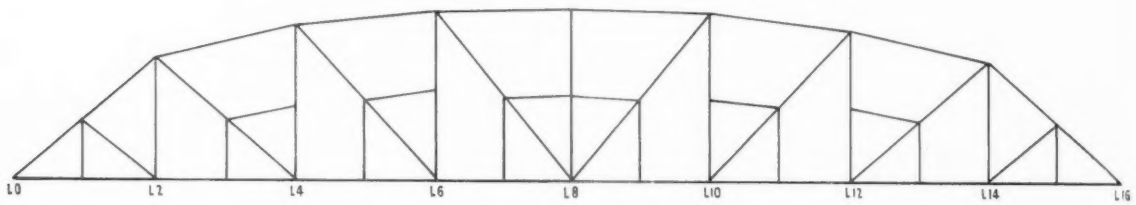
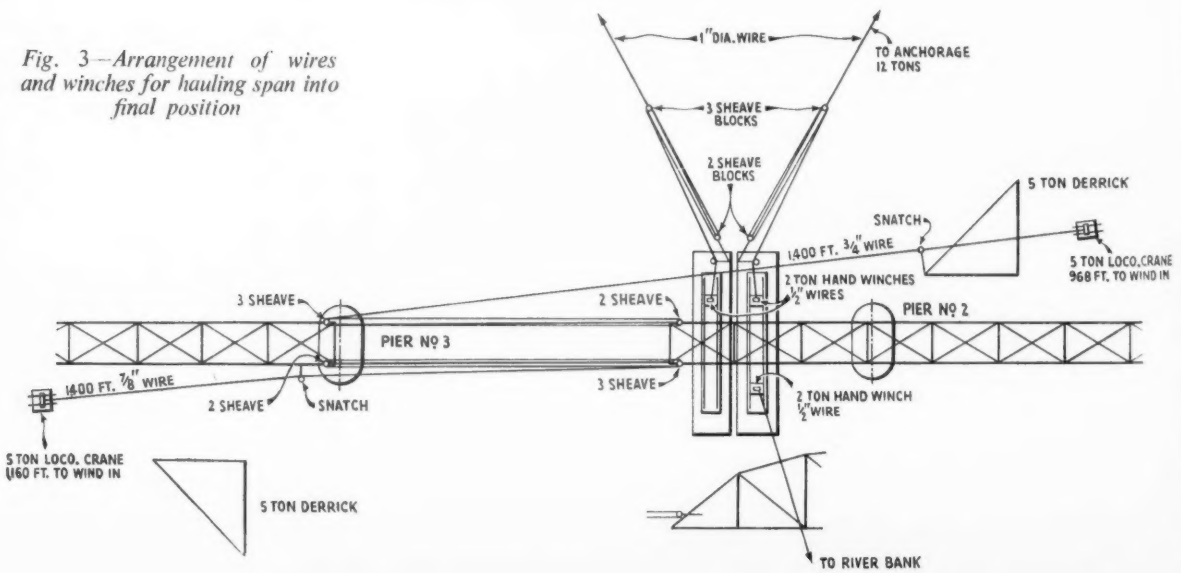


Fig. 2—Main span showing panel points

Fig. 3—Arrangement of wires and winches for hauling span into final position



Main span waiting to be lowered on to pontoon before launching

girders along the 300 ft. of the bridge. The bridge was slowly carried away, some of the girders floating for half a mile before sinking through the sudd.

But for the war the old bridge would have been replaced, and a contract for a new bridge had already been placed with the Cleveland Bridge & Engineering Co. Ltd., of Darlington, the builders of the Lower Zambesi Bridge. This enabled work to begin at the site soon after the collapse of the old bridge, and in the meantime a train ferry was improvised.

It consisted of two old Zambesi stern-wheel steamers with two river barges lashed between them on which wagons were ferried. The tonnage of goods ferried into Nyasaland in nine months of operation was 72,130, and that of goods exported, 28,561. Passenger traffic was not large enough to warrant the ferrying of coaches.

The new bridge has one centre span of 258 ft. and side spans of 160 ft. The fears of a recurrence of the flood conditions precluded the usual method of supporting the girders on staging built on the river bed. The centre span was therefore erected on the north bank, ready for placing in position when conditions were favourable.

Method of Launching Span

The main span was erected on supports at each panel point, the heights of the supports being adjusted to give the correct erection camber—panel point L.8 was 2¼ in. higher than L.0. and L.16 in Fig. 2.

When the span was completely assembled and all holes in the main joints had been filled either with rivets or parallel drifts or service bolts, heavy bogies were put in below panel points L.4 and L.12 on either side and the span was lowered on to these bogies. A 2-ft. gauge track had been laid below each girder on which these bogies could travel. The span was then pulled forward by wire ropes hauled by the steam winches of the 5-ton derrick crane and 5-ton locomotive crane for a distance of 64 ft. 6in., panel point L.4 then being over the north pier and the length L.0-L.4 projecting over the river. This movement was effected on November 3. (The arrangement of the hauling gear is shown in Fig. 1.) The bogies under L.12 were then moved back to L.16 and the cables were laid out across the river for hauling the span the remainder of the distance.

Due to the extremely low level of the river, it was not possible to move the pontoons, which with their staging were to support the leading end of the span, sufficiently close to the shore to take the weight of the span at L.2. The pontoons were therefore placed in position under L0, the span was lowered on to them and hauled out a further 32 ft. 3 in. until panel point L.6 was over the pier.

The weight was then taken on the pier and the pontoons removed. This move was made on November 6 and the situation was then as shown in the first illustration.

On November 7 the pontoons were placed in position under panel point L.2 and the weight of the span transferred to them from pier 2, as shown in the second illustration. The span was then hauled across the river until the end was over the bearings on pier 3.

The layout of the wires and winches for this part of the operation was as shown in Fig. 3. During the hauling the leading end of the span was kept accurately in line by adjustment of the lengths of the two wires from the pontoons to the river banks upstream and one wire to the river bank downstream.

When the end of the span had arrived over pier 3 it was lifted on jacks to release the weight from the pontoons, and then lowered on to the bearings. The end over pier 2 was then lifted from the travelling bogies, the bearings were put in place and the end of the span was lowered into position.

In the condition in which the main span was launched it weighed about 300 tons. The operation of joining the centre span and that already erected on the south bank occupied half an hour. The first train crossed the new bridge on January 6 and the official opening by the Governor of Nyasaland took place on January 17.

End of span resting on pontoon

EXHIBITION OF I.C.I. TECHNICAL LITERATURE.—An exhibition of technical literature held by Imperial Chemical Industries in July, 1949, mainly for its head office staff, aroused a good deal of public interest and it has been decided to stage a second exhibition in a more popular form at the Academy Cinema Exhibition Hall, Oxford Street, London, W.1, on weekdays from March 6-17. I.C.I. publishes new technical literature at the rate of 800 publications a year, and from 2,000,000 to 4,000,000 copies are printed annually.

The New Chiromo Bridge, Nyasaland

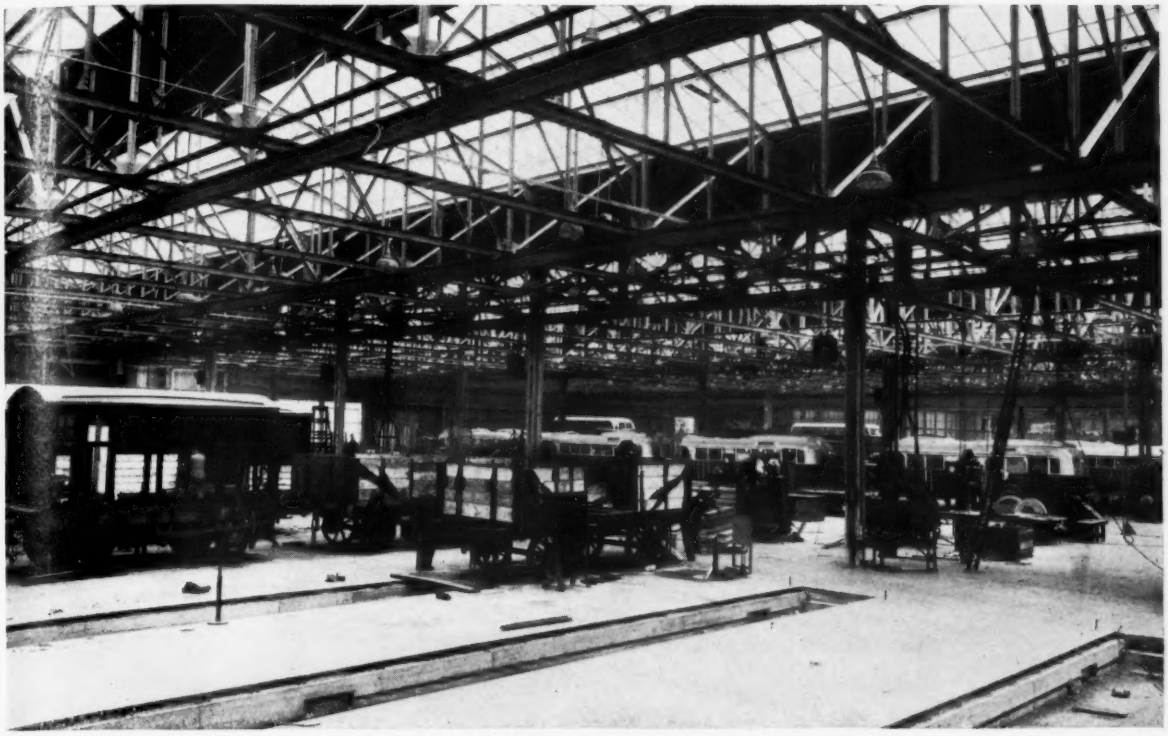
Centre span floating on pontoon and approaching pier

Centre span in position, ready for joining to south span

Launching operation completed, and span lowered on to pier

Rail and Road Workshops in Ulster

(*See also pages* 153 *and* 159)



Interior of the new Duncrue Street workshops showing part of the railway carriage and wagon shop and the road vehicle body shop in the background

Restaurant car and single-deck bus under construction at the Dunmurry workshops

Single-Deck Bus of Integral Construction

Design incorporating an uninterrupted floor level and vibrationless steering

A RECENT development in single-deck buses for road passenger transport is the Olympic type jointly developed by Leyland Motors Limited and Metropolitan Cammell Weyman Motor Bodies Limited. This type of bus, which is in production at the present time, has been designed both for home and overseas use, the latter incorporating right- or left-hand drive, while the drive in the former is conventional.

Entirely of integral design, the structural members carrying the power and running units are of high-grade steel, with pillars, longitudinal members, outer panels, roof framing, and roof panels of aluminium alloy; the longitudinal load-carrying members virtually extend from the floor line to the under-side of the windows, and in a lesser degree upwards into the roof. To combat torsion movement, the transverse members extend from the lowest point of the underframe to the underside of the floor and to the waistline at the front and the rear.

Weight distribution in relation to the accessibility of the power unit and fittings is a feature of the design, and the maintenance of the injection pump, injectors, valve gear, and filters can be carried out from the outside of the coach; the power unit can also be removed without difficulty.

A substantial aluminium bumper is carried around the vehicle, and the outer panels from the bumper rail to the waistline are of heavy gauge, forming part of the load-carrying structure, the wheel-arches are of stainless steel, providing freedom from corrosion during the life of the vehicle. The underfloor and the inside surfaces of the panels are sprayed with a sound-deadening compound.

Interior Design Features

The driver's compartment is separated from the passengers' saloon by a waist-high partition on the driver's side and a hinged guard-rail on the gangway. The windscreen and side windows of the driving compartment have a lower sight line than the saloon windows, providing ample visibility. The entrance door is power operated, and the emergency all-metal door is provided with accommodation handles on the interior and exterior; the main side windows are divided into two portions, the top being fitted with a horizontal sliding window, and the lower portion having a fixed glass.

Seating accommodation is arranged on both sides of the centre gangway. The seat framing is of tubular steel frames, with polished open-type top grab rails. Seat cushions and backs are upholstered in leather on sponge-rubber fillings. The body-sides below the waist rail are lined with panels suitably finished to match the interior colour scheme.

The engine is a horizontal six-cylinder direct-injection compression-ignition engine, located amidships, under the floor of the coach; the crankcase and cylinder block is a monobloc iron casting with pre-finished shoulder-located dry-type liners; the two cast-iron cylinder heads are detachable and identical. Delora Stellite-faced inlet and exhaust valve seats are frozen into machined recesses in the valve stems, which are chromium-plated to reduce wear; the crankshaft is an alloy-steel forging, hardened by the nitriding process, and carried in seven main idium-coated shell-type bearings. The connecting rod big end bearings are of similar design to the main bearings, phosphor bronze bushes being used for the small ends, and the connecting rods are heat-treated alloy-steel stampings.

The pistons are of a special aluminium alloy, and fitted with three compression and two oil-scraper rings, the combustion chamber being machined in the piston crown to form a toroidal cavity; the gudgeon pins are fully-floating and retained by clips. The camshaft is of forged steel with integral cams.

Lubricating and Fuel System

Oil is delivered to the engine by a gear-driven pump from a helical gear on the rear of the camshaft. There is a full-pressure supply to the main, big end, and camshaft bearings; the oil passes through a large-capacity filter of the full-flow type, the capacity of the

(*Continued on page* 165)

Interior view of single-deck bus showing seating accommodation

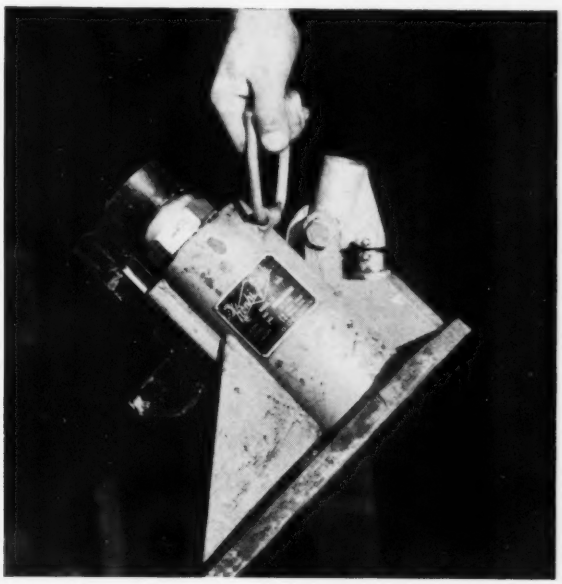
A Lightweight Hydraulic Jack

Remains in place during movement of traffic

THERE has recently been developed for use on the permanent way a lightweight hydraulic jack weighing 55 lb. and having a lifting capacity of 6 tons on the toe and 8 tons on the head. A series of preliminary tests has shown that loads as high as 5 tons are rarely met with in lifting single turnouts, and the capacity of the jack, therefore, should be ample for all normal purposes.

The base of the jack has an area of 80 sq. in., which results in a pressure of 3·5 tons per sq. ft. on the ballast, and the toe has ample projection for use with a flat-bottom or bull-headed rail. The top of the jack is 5 in. about the lifting toe, and during lifting operations the head does not project above rail level, which means that the jack can be used during movement of traffic, should it be necessary to allow traffic to pass while the jack is in position. In such circumstances, however, pressure must be released, and for this purpose the jack is fitted with a release valve which is incorporated in the pump lever socket. To release the pressure, the pump lever requires to be given a twist to the left, when the release of the load is instantaneous; the handle is not fixed in its socket and can be readily withdrawn. The pump ratio is adjusted to prevent overloading, the maximum lift being 5 in.

Hydraulic jack in position with toe below rail



Showing the ease with which the jack is handled

The new jack, known as the Kenhi (MK.1) which can be used for lifting and slueing, has been designed by the Kenitra Co. Ltd., 48-50, St. Mary Axe, London, E.C.3. It has been tried out experimentally on British Railways.

Single-Deck Bus of Integral Construction

(*Concluded from page* 164)

system being approximately 5·5 gal. Fuel is supplied by a C.A.V. pump used in conjunction with Leyland Multi-hole injectors.

A combined mechanical and vacuum-operated governor is fitted at the rear of the injection pump; a diaphragm-type lift-pump, incorporating a hand priming device, supplies fuel to the injection pump at constant pressure.

The change-speed unit is mounted on the left-hand side of the driver. Operation to the gearbox is by means of tubular shafts and knuckle joints. There are four forward speeds and reverse, with constant-mesh in fourth, third, and second speeds; engagement is by synchromesh.

The clutch is of the single dry-plate type 16¼ in. dia., faced with linings ¼ in. thick on the flywheel side and ⅜ in. thick on the pressure plate side; a flexible clutch centre is used. Clutch adjustment is effected by means of four stages of adjustment on the clutch withdrawal levers to allow for wear of the linings.

Other features provided in the design include vibrationless steering, and vacuum servo-brakes; air brakes are fitted to overseas models. The engine data are as follow:—

Bore and stroke	4·8 in. × 5·5 in. (121·9 mm. × 139·7 mm.)
Cubic capacity ...	597 cu. in. (9·8 litres)
Maximum torque	410 lb. ft. (56·7 kg.-m.) at 900 r.p.m.
Fuel consumption	Minimum 0·34 pts. b.h.p./hr. (162·8 grm./h.p. hr.) Maximum 0·36 pts./b.h.p./hr. (172 grm./h.p./hr.)
Compression ratio	15·75 to 1

PUNJAB TRAIN SMASH.—Fifty persons were killed and 60 injured in a collision which occurred between two trains at Sirhind Station, 30 miles from Ambala in East Punjab.

FRANCO-BRITISH DAY AT PARIS TRADE FAIR.—During the second week of the Foire de Paris, May 13-29, a Franco-British day will be held, on May 25 or 26, when British businessmen will be the guests of the organisers at a banquet. A delegate of the Fair has already visited Britain to invite businessmen to visit the Fair in groups. A special programme has been drawn up, covering hotel and meals, sightseeing, and so on, from arrival in Paris on the evening of May 21 to departure on the morning of May 27. Group visitors will receive a permanent free entrance card. Those interested in the Franco-British celebration should write to the Foire de Paris, 23, Rue Notre Dame des Victoires, Paris, 2e.

Pacific Locomotives for Western Australia

North British 4-6-2 "PM" class main-line locomotives with steam power reversing gear

THIRTY-FIVE Pacific type locomotives are nearing completion at the Hydepark works of the North British Locomotive Co. Ltd., Glasgow, for the Western Australian Government Railways. These new locomotives, which are designated "PM" class, are a modified version of the 4-6-2 "P" class built by this firm in 1924 and are to the design and requirements of the railway administration.

The main frames are of steel plates 1⅛ in. thick and suitably stayed throughout. Skefko rolling-bearing axleboxes are fitted to the engine bogie and truck axles, and to the coupled axles of the last 16 engines; the gaps on the frames are arranged to accommodate either plain or roller-bearing axleboxes, and manganese steel liners are fitted to the axleboxes and guide faces. Wedges are of the spring-controlled self-adjusting type and lubrication of the plain bearing axleboxes and the horn cheeks is by means of two Silvertown six-feed lubricators

The rear portion of the frames is spaced further apart by means of a frame joint casting and hind dragbox to accommodate the ashpan of large volume. The hind truck roller-bearing radial axleboxes are securely tied together by plate framing, and spring side control gear is provided. Laminated bearing springs are of the overhung type without compensation.

Walschaerts valve gear actuates 10 in. dia. piston valves, and the reversing gear is of the Hadfield steam-power type mounted on a bracket attached to the engine frame. The cylinders are lubricated by Detroit sight-feed lubricator.

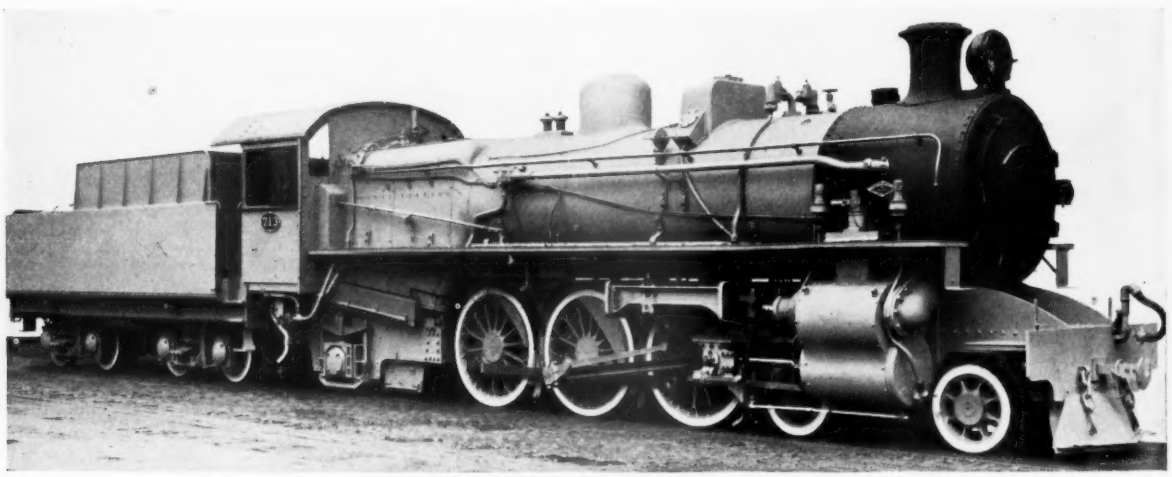
The boiler barrel is parallel and consists of two rings with an external diameter of 4 ft. 9 in. at the firebox end; all tubes are of Aquacidox steel. The boiler has a Belpaire firebox with a steel inner box of all-welded construction and stayed to the outer roof by direct roof stays; rigid waterspace stays at the throat and top corners of the back plate are of Monel metal and stays in the firebox sides are of Longstrand hollow steel.

The superheater, comprising 21 elements and incorporating an anti-vacuum valve, is supplied with steam from a regulator of the Joco "O" type situated in the dome, and the boiler and firebox are lagged throughout with J. W. Roberts plain lightweight asbestos mattresses.

Boiler fittings include two 3 in. dia. Ross pop safety valves, two Gresham & Craven No. 9 mm. R.C.W. injectors, an Everlasting blow-off cock, and two sets of water gauges and protectors. The steam turret is provided with the necessary valves for supplying steam to injectors, ejector, lubricator, steam reverser, electric lighting, turbo-generator, and whistle.

Vacuum brake equipment is fitted on the engine and tender with one 24 in. dia. cylinder on the engine and one 21 in. dia. cylinder on the tender. Stones electric lighting equipment in-

(*Continued on page* 169)



Western Australian Government Railways Pacific locomotive for main-line operating

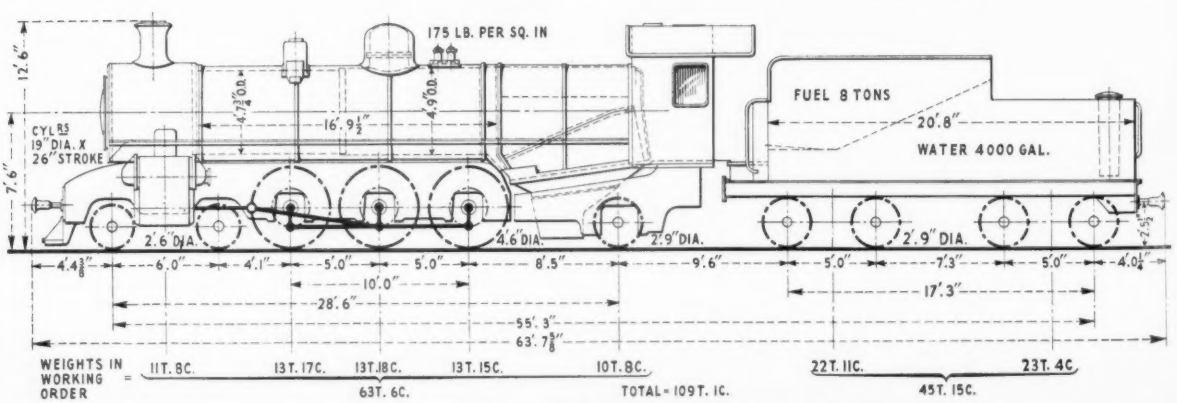


Diagram showing principal weights and dimensions of the locomotive

RAILWAY NEWS SECTION

PERSONAL

EASTERN & N.E. REGIONS APPOINTMENT

The Railway Executive announces that, with the concurrence of the British Transport Commission, Mr. J. F. Harrison, Assistant Chief Mechanical Engineer, Eastern & North Eastern Regions, Doncaster, has been appointed Mechanical & Electrical Engineer, Eastern & North Eastern Regions, Doncaster. This appointment is in accordance with the organisation for Mechanical & Electrical Engineering which is being standardised throughout British Railways; the work hitherto covered by the departments of the Chief Mechanical Engineer and the Electrical Engineer in the Eastern and North Eastern Regions is now being reorganised under the Mechanical & Electrical Engineer (Mr. J. F. Harrison), the Carriage & Wagon Engineer (Mr. A. E. Robson), and the Road Motor Engineer (Mr. W. Guy Jones). The new organisation will be implemented in stages.

RAILWAY EXECUTIVE APPOINTMENTS

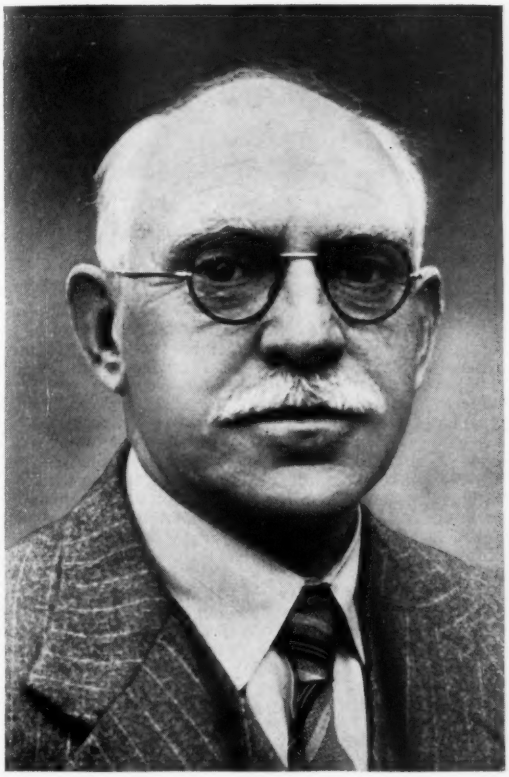
The Railway Executive announces that, with the concurrence of the British Transport Commission, the following appointments have been made at Railway Executive Headquarters:—

Mr. H. E. Kemp, Outdoor Carriage & Wagon Assistant, Southern Region, London Bridge, to be Executive Officer (Wagons).

Mr. B. Adkinson, District Motive Power Superintendent, Doncaster, to be Administrative & Motive Power Assistant to the Chief Officer (Motive Power).

Mr. R. T. Robinson has been appointed a Director of the Dorada Railway Co. Ltd. and the Dorada Railway (Ropeway Extension) Limited.

Mr. H. J. Comber, Chief Officer for Labour & Establishment, London Midland Region, British Railways, who, as recorded in our December 30 issue, is retiring.



Mr. H. J. Comber

Chief Officer for Labour & Establishment, London Midland Region, who is retiring

Mr. R. Simpson

Appointed Regional Staff Officer, London Midland Region

entered the service of the L.N.W.R. as a junior clerk in 1903, and, after several years station experience, was promoted to the District Superintendent's Office of the Southern Division. He was promoted to the General Manager's Office in 1911, to undertake responsibilities in connection with the staff problems arising from the Labour Movement, then in its early stages. Mr. Comber was associated with the introduction of the system of scales of pay for the clerical staff on the L.N.W.R. and the subsequent grading of positions. With the railway amalgamations, he took charge of the salaried staff side of the work for the group company, and became Assistant for Salaried Staff. Later he became General Assistant, with general responsibility for all phases of staff and labour work. He was appointed Chief Officer for Labour & Establishment, L.M.S.R., in March, 1943. Mr. Comber has been an active participant in the growth of the conciliation and negotiating machinery from its inception beginning with the Arbitration Awards of 1909 and the introduction of conciliation machinery in 1911.

Mr. Robert Simpson, M.B.E., Regional Staff Officer, Scottish Region, British Railways, who, as recorded in our December 30 issue, has been appointed Regional Staff Officer, London Midland Region, entered the service of the Caledonian Railway as a junior clerk in the Locomotive Department at Stirling in 1905. He was transferred to the Aberdeen depot on staff administration and locomotive accountancy work in 1909, and to the Locomotive Superintendent's Office in Glasgow in 1915 as Staff Clerk in connection with workshops and locomotive running shed staff. On the amalgamation of 1923 he was transferred to the Operating Department (Motive Power Section) of the L.M.S.R., and in 1932 he became Chief Staff Clerk (Motive Power). In 1939 he was appointed Chief Staff Clerk, Operating Manager's Department, which position embraced salaried, conciliation and workshop grades in the traffic, goods and motive power sections. On September 1, 1947, Mr. Simpson became Staff Assistant, Operating Manager's Department, responsible for administration and staff management of all railway operating grades (traffic, goods and motive power) in the Northern Division, L.M.S.R., and a member of the L.M.S.R. Sectional Councils Nos. 2, 3 and 4. He became Regional Staff Officer, Scottish Region, on January 1, 1948.

Mr. R. R. Jones

Appointed Assistant Manager, General Belgrano Railway, Argentina

Mr. D. S. Purdom

Appointed Chief Mechanical Engineer, General Roca Railway, Argentina

Mr. J. W. Terrington

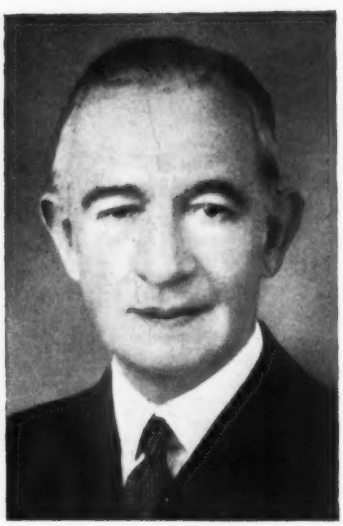
Who recently retired as Assistant Superintendent (Operating), East African Railways & Harbours

Mr. Rodolfo R. Jones, who, as recorded in our issue of November 25 last, has been appointed Assistant Manager of the General Belgrano Railway (former Argentine State system, less the lines in Patagonia), entered the service of the Argentine Great Western Railway (later worked by the Buenos Ayres & Pacific Railway) in 1900. In 1934 he passed into the Civil Service, in which he remained until July, 1948. With the setting up of the Ministry of Transport he was appointed Head of the Railway Control Department, and later he became Chief of the Northern Zone of the General Belgrano and General Mitre lines. Mr. Jones is a great-grandson of Captain Román Jones, of the 71st Regiment (which saw active service during the English invasions of 1807 under the command of Sir Carr Beresford), who settled in Argentina. A brother of Mr. Jones, and one of his uncles, became Generals in the Argentine Army; and another uncle was at one time Governor of the Province of San Juan, Argentina.

Mr. Douglas S. Purdom, M.I.Mech.E., who has been appointed Chief Mechanical Engineer of the General Roca (former Buenos Ayres Great Southern) Railway, served his apprenticeship at the Cowlairs Works of the North British Railway, subsequently becoming Inspector of Materials for that railway. After three years experience as Assistant to the Managing Director of Bennetts Iron Foundry Company, of Stockport, he joined the Buenos Ayres Great Southern Railway in 1924 as a technical assistant in the workshops at Remedios de Escalada. He became General Assistant to the Chief Mechanical Engineer in 1939, and Principal Assistant in 1947.

Mr. J. W. Terrington, Assistant Superintendent (Operating), East African Railways & Harbours, who, as recorded in our January 27 issue, has retired, was born in 1892, and joined the North Eastern Railway in the Middlesbrough district at the age of 14. During the first world war he served with the 2nd Battalion, Sherwood Foresters, and was mentioned in despatches. In 1919 he joined the former Uganda Railway, and in 1928 became District Traffic Superintendent, Eldoret. Subsequently he held posts at Nairobi, Nakuru and Kampala, and in 1937 was transferred to headquarters at Nairobi as Assistant Superintendent (Operating).

Mr. W. J. Manclark, Assistant Stores Superintendent, London Midland Region, British Railways, who, as recorded in our January 27 issue, has been appointed Fuel Purchasing Officer, under the Chief Officer (Stores), at Railway Executive Headquarters, was born at Richmond, Surrey,



Mr. W. J. Manclark

Appointed Fuel Purchasing Officer, Railway Executive

Mr. H. G. Bowles

Appointed Assistant Chief Regional Officer, Western Region

Mr. J. W. Terry

Appointed Acting Stores Superintendent, Southern Region

and educated at Lord Weymouth's Grammar School, Warminster. He entered the service of the L.N.W.R. in the Mineral Traffic Manager's Office at Euston, and was transferred to the then newly-formed Central Purchasing Office of the General Manager's Department in 1910. After occupying other posts connected with purchasing he became Assistant for Purchasing to the Chief Stores Superintendent, L.M.S.R., in 1929, assuming responsibility for the purchase of coal in 1933. Mr. Manclark has visited British Columbia, Eastern Canadian Provinces, Newfoundland and several European countries in connection with his work. He was Chairman of various railway coal committees during the war, and in 1948 was appointed Assistant Stores Superintendent, London Midland Region, and was made Liaison Officer for the Railway Executive in connection with coal supplies. In August, 1949, he was appointed Chairman of the Inter-Regional Committee for the Salvage of Fuel.

Mr. H. G. Bowles, Assistant to Chief Regional Officer, Western Region, British Railways, who, as recorded in our February 3 issue, has been appointed Assistant Chief Regional Officer, entered the service of the Great Western Railway in the Goods Department at Paddington in 1913, and three years later was transferred to the Reading district. After seven years general experience, including a period of training in the Traffic Department, he was, in 1923, appointed to the General Manager's Office, where he had extensive experience of the major questions arising from the administration of the railway and its ancillary and associated undertakings, and of several Government and other inquiries affecting transport. In 1941 he became Head of the Section which covered, among other matters, railway and docks rates and charges, rolling stock and stores, statistics and accounts, and road and rail co-ordination. In April, 1946, he was appointed Chief Clerk to the General Manager, and, following nationalisation, Assistant to the Chief Regional Officer, Western Region. Mr. Bowles has been prominently associated with the G.W.R. (and now Western Region) (London) Lecture & Debating Society for many years, and with the activities of the other staff organisations.

Mr. J. W. Terry, M.C., Assistant Stores Superintendent, Southern Region, British Railways, who, as recorded in our January 27 issue, has been appointed Acting Stores Superintendent, was educated at the Whitgift Middle School, Croydon, and joined the L.B.S.C.R. in 1908 as a junior clerk in the Storekeeper's Office at New Cross. He volunteered for military service on the outbreak of the first world war, in which he gained a commission and was awarded the M.C. He returned to the Storekeeper's Department, and in 1923 was appointed to the Purchasing and then to the Sales Section of the Southern Railway at Waterloo. Mr. Terry became Chief of the Purchasing Section in 1940, Indoor Assistant to the Stores Superintendent in 1945, and Assistant Stores Superintendent in 1947.

Mr. I. A. R. Stedeford, Chairman & Managing Director of Tube Investments Limited, is leaving England in the *Queen Elizabeth* on February 15 on a business tour, during which he will visit the United States, Australia, New Zealand and South Africa. He will travel by air after his arrival in America. He will be accompanied by Mr. E. D. E. Andrewes, Managing Director of the Tube Investments export organisation, T.I. (Export) Limited, and he will return to England in mid-April. Last year Mr. Stedeford visited India and South Africa.

Sir Harry Railing, Chairman & Joint Managing Director of the General Electric Co. Ltd., sailed in the *Pretoria Castle* on February 2 for an extensive tour of southern Africa, during which he will visit the head office and branches of the British General Electric Co. Ltd., at Johannesburg, Cape Town, Port Elizabeth, Durban, Salisbury and Bulawayo.

Mr. John Elliot has been appointed a Director of the Birmingham & Midland Motor Omnibus Co. Ltd., in place of Mr. G. L. Darbyshire, who has resigned.

The council of the Institute of Transport has appointed Mr. J. O. Sanders, General Manager of the Malayan Railway, to serve as Honorary Corresponding Member for Malaya.

Mr. Richard Miles, Managing Director of Head, Wrightson & Co. Ltd., has been elected Chairman in succession to the late Sir Guy Wrightson. Sir John Wrightson has been appointed Vice-Chairman.

Mr. Herman Press, Treasurer of the American Locomotive Company, has been appointed a Director. He is Director & Treasurer of the American Locomotive Export Co. Inc. and of Montreal Locomotive Works Limited.

Mr. J. F. Ronca will succeed Dr. D. T. A. Townend as President of the Institute of Fuel in October, 1950. Mr. Ronca has served since May, 1945, as Honorary Secretary of the Institute, having previously been a Member of Council since 1933.

The peerage conferred on Sir Alexander Steven Bilsland in the New Year Honours has been gazetted by the name, style, and title of Baron Bilsland, of Kinrara in the County of Inverness. Lord Bilsland is a former member of the L.M.S.R. Scottish Committee.

The peerage conferred in the New Year Honours on Mr. T. W. Burden, M.P., Second Church Estates Commissioner since 1945, and a former member of the National Executive of the Railway Clerks' Association, has been gazetted by the name, style, and title of Baron Burden, of Hazlebarrow, in the County of Derby.

Mr. A. Whitfield has been appointed Divisional Staff & Welfare Officer, North Western Division, Road Haulage Executive, in succession to Mr. G. N. Daffern, who is proceeding to Canada. Mr. Whitfield has recently been Assistant Director of Personnel, Control Commission for Germany.

The Ministry of Labour & National Service announced recently that Mr. Moelwyn Hughes, K.C., who is prospective Labour candidate for Islington North, had resigned his appointment as Chairman of the Catering Wages Commission; and that in the present circumstances, and in view of the inquiry into the operation of the Catering Wages Act in the hotel industry on which the Commission was engaged, the Ministry had invited Sir John Forster, K.C., President of the Industrial Court, to be Chairman of the Commission during the period of the inquiry, which invitation Sir John Forster had accepted.

Mr. S. F. Dingle, Assistant Vice-President of Operations, Canadian National Railways, has been appointed Vice-President in charge of Operations, in place of the late Mr. N. B. Walton.

Mr. Harold Gardner, Goods Agent, Queens Walk, Nottingham, Eastern Region, British Railways, has been appointed Stationmaster, York, North Eastern Region.

Mr. W. Marshall Clark

The South African Minister of Transport announced on February 6 the appointment of Mr. W. Marshall Clark, hitherto General Manager of the South African Railways, as Interim Secretary-General of the Central African Transport Conference, which will meet in Johannesburg next October. Mr. Marshall Clark is at present visiting Paris for discussions. The Minister said that the development of the continent of Africa was engaging the increasing attention of all countries with African interests, and the co-ordination of their efforts was essential. To that end, two important conferences had been held in 1949, the first a preliminary one on African transport (in Lisbon), and the second a scientific one (in Johannesburg). It had now been decided to hold a full conference in Johannesburg next October, when the permanent organisation would be set up, under a Secretary-General, who would be its executive head. South Africa had been asked to appoint an interim Secretary-General, who would presumably become the permanent head after the October conference.

Pacific Locomotives for Western Australia

(*Concluded from page* 166)

cludes a headlamp on the front of the engine and a rear lamp on the tender, with lights for glass gauges, lubricator, and cab roof.

The design of the tender is similar to that of the "P" class, but with increased water capacity and tender tank and bunker of all-welded construction, the underframes are built up from channel sections, angles, and plates suitably braced and welded together. The bogie frames are of the Diamond type fitted with Skefko roller bearing axleboxes.

The principal dimensions of the locomotives are as follow:—

Cylinders (2), dia. and stroke ...	19 in. × 26 in.
Wheels leading bogie, dia.	2 ft. 6 in.
,, coupled, dia.	4 ft. 6 in.
,, hind truck, dia.	2 ft. 9 in.
,, tender, dia.	2 ft. 9 in.
Wheelbase engine	28 ft. 6 in.
,, coupled	10 ft. 0 in.
,, tender	17 ft. 3 in.
,, tender bogie	5 ft. 0 in.
,, engine and tender, total...	55 ft. 3 in.
Heating surface :—	
Tubes	1,370 sq. ft.
Firebox and two arch tubes ...	135 sq. ft.
Total evaporative	1,505 sq. ft.
Superheater	363 sq. ft.
Combined total	1,868 sq. ft.
Boiler pressure	175 lb. per sq. in.
Grate area	35 sq. ft.
Water tank, capacity	4,000 gal.
Coal, capacity	8 tons
Weight of engine in working order ...	63 tons 6 cwt
,, of tender in working order ...	45 tons 15 cwt.
,, total	109 tons 1 cwt.
Adhesive weight	41 tons 10 cwt.
Tractive force at 85 per cent. boiler pressure	25,860 lb

Ministry of Transport Accident Report

Chester, London Midland Region, British Railways: July 4, 1949

Brigadier C. A. Langley inquired into the accident which occurred at 10.11 a.m. on July 4, 1949, at Chester Station, when the 7.20 a.m express Derby to Llandudno, consisting of six coaches drawn by a class "5" 4-6-0 locomotive, admitted to no. 5 platform line by a calling-on arm at no. 2 signal box, collided at about 10 m.p.h. with the 9.20 a.m. express, Crewe to Holyhead, itself just starting forward on a similar signal at no. 3 signal box. The latter train was formed of ten crowded coaches, with many passengers in the corridor, drawn by a class "5XP" 4-6-0 engine. Forty-three passengers and seven railwaymen were injured, four passengers being detained in hospital. Fortunately, there were no serious casualties. Assistance speedily arrived. Normal working was resumed at 11.25 a.m. The weather was fine and clear.

The accompanying diagram shows the position of platforms, tracks, signals, signal boxes, and so on, essential to an understanding of the case.

Exemption from absolute block working on the up and down main and platform lines was granted many years ago, and the permissive station yard block system is in force, the relevant extracts being as follow:—

Regulation 4 (*d*): *Where permissive station yard block is in operation*, when a train is already in the section and another train is required to be sent forward into that section, the signalman must send the "Is Line Clear" signal to the box in advance, and the signalman there, provided he does not desire to keep the train at the box in rear, must acknowledge the "Is Line Clear" signal by sending the special bell signal (4-2), when, after the provisions of clause (*e*) have been carried out, the train may be allowed to enter the section. The "Train Entering Station" signal must then be sent and must be acknowledged by one beat.

(*e*) (ii) Where a *Calling-On* signal is provided on the stop signal controlling the entrance to the section ahead, it must be used, in accordance with rule 44, when permission has been given by the special bell signal (4-2) for a train to proceed, and where a "Warning" signal is provided on the stop signal controlling the entrance to the section ahead, it must be used, in accordance with rule 45, when permission has been given by the special bell signal (4-3) for a train to proceed. In these circumstances it will not be necessary to verbally instruct the driver or exhibit a green hand signal.

The relevant extracts from the Rule Book are:—

Calling-On Signals: 44(*a*) calling-on signals, where provided, are placed below the signal controlling the entrance to the section ahead, and when lowered authorise the driver to proceed forward cautiously into the section ahead as far as the line is clear. The lowering of the calling-on signal does not authorise the next stop signal to be passed at danger; (*b*) except where authorised, the calling-on signal must not be lowered until the train has been brought to a stand at it.

Station Yard Working: (97) when a train is allowed to proceed towards the rear of another train which is moving forward, the driver of the second train must follow cautiously and at such a distance as will enable him to avoid colliding with the first train in the event of its being stopped, and he must not pass a signal which has been lowered for the first train until it has been replaced to danger and again lowered; (98) when a signal is lowered for a train to leave a station or siding to run towards a train ahead of such signal, the driver must proceed at such a speed as will enable him to stop before reaching the train ahead.

The home and calling-on arms leading to the down lines in the station are operated by one lever in each case through an electric selector and track circuit control.

Booked times for the trains concerned are:—

Train	Platform	Time of Arrival	Time of Departure
		a.m.	a.m.
8.35 a.m. Manchester to Llandudno	4	9.48	9.55
9.20 a.m. Crewe to Holyhead	4	9.56	10.05
7.20 a.m. Derby to Llandudno	4	10.09	10.13

As the Manchester train was late, the Crewe express, on time, was brought into no. 5 platform and the former sent into no. 4 later over the down main, leaving there at 10.8 a.m. One minute later the Derby train stopped at no. 2 box home signals, slightly ahead of time, awaiting acceptance. The calling-on arm at no. 3 box was in due course lowered for the Crewe express to proceed, and it had just started when it was struck by the Derby train and driven forward a distance of some 15 yd.

Evidence

There were two signalmen in no. 2 box. The one dealing with these movements said that after the Derby train had been standing for a few minutes he enquired about the position at no. 3 box and was told that the Crewe train was just leaving and that the Derby train, by that time accepted by the 4-2 bell signal, could follow it along. The signalman at no. 2 box thought the first was about to move and pulled lever 166, which, as the track circuit was occupied, cleared the calling-on arm to no. 5 platform.

The Derby train started at once, and the signalman thought it was moving unusually fast, considering there was a train in front, and eventually he realised that a collision would occur. By then he was unable to take any preventive action. Normally he did not lower the calling on arm before the train ahead was moving, although the regulations permitted him to do so. When allowing a train into an occupied platform to clear the junction with the Manchester line, he usually warned the driver. The calling-on arm was frequently used for shunting movements. In his 26 years in the box he had never known an accident attributed to a driver entering Chester Station at too great a speed.

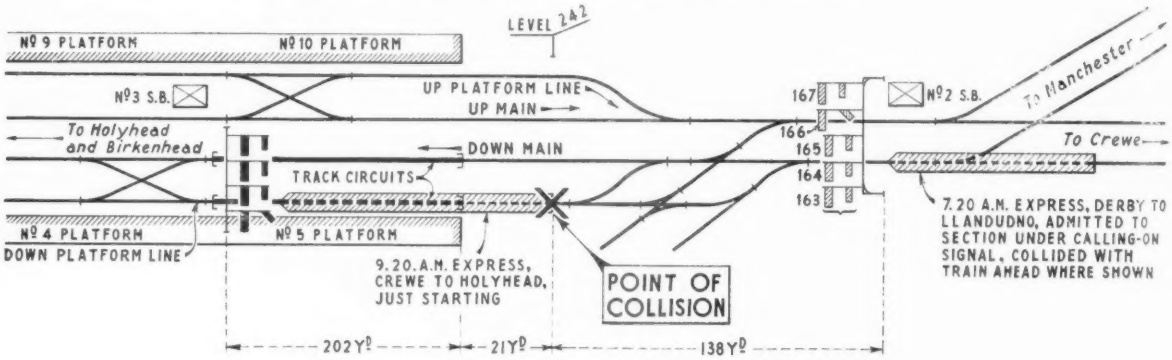


Diagram illustrating circumstances of collision at Chester, L.M.R., July 4, 1949

The other signalman, sitting down having a meal, realised almost at once that the train was going too fast, went to the station end of the box and shouted to the driver to stop. He confirmed that the calling-on arm was used constantly. He had had 27 years in the box. He recalled an accident some years ago when he was on duty, when a driver, although warned, had collided with a train standing in the station.

The driver of the Derby train, a man of 47, with 31 years service, driving for eight years and with a clear record, said he partially opened the regulator, closed it after a short distance and coasted, keeping a sharp lookout from his position on the left. He heard no shout, but suddenly saw the other train and applied the brake. Right-hand curvature prevented the line from being seen for more than 5 to 10 yd., and he admitted he did not look out on the right-hand side before starting. His young fireman had never been into Chester before, and he did not speak to him about the signals. He frankly admitted that he knew he should be able to stop within sighting distance when running on a calling on indication. He did not expect the other train to be standing out so far.

He had on occasions followed another train along the platform.

It was the first time the fireman, 19 years old, had been on a long-distance passenger train. When stopped at no. 2 box he saw another train on the platform line, but passed no comment to the driver as he did not realise it was the line they were going to enter. He did some firing, and looked out shortly before the collision, to see the other train in front of them. He heard no shout from the box.

Inspecting Officer's Conclusion

Responsibility for the accident rests with the driver for entering the station too fast. No doubt he was surprised to find the other train projecting beyond the platform, but he had not taken steps to satisfy himself of the condition of the line ahead, although he was thoroughly familiar with the working and knew that visibility from the left of the footplate was limited to a few yards. It was unfortunate that the fireman passed no comment about the other train being 150 yd. in front of them, as this doubtless would have led the driver to cross the footplate and see it. He cannot be held responsible for failing to comment on the signals or layout, but it is desirable that young firemen should be encouraged to ask questions about the routes over which they travel, so as to learn them quickly and be able to assist their drivers in observing signals, part of a fireman's duty under rule 128. The signalmen did nothing contrary to the regulations, but it would have been more prudent to wait until the Crewe train was seen to be moving before lowering the calling-on arm. The signalman was probably influenced by a desire to clear the junction.

Remarks

In large and busy stations such as Chester, permissive station yard working is essential to prevent accumulation of delays, especially when trains are running out of course and extra traffic has to be handled; in addition, coaches and vans have to be attached or detached and other shunting done. It is recognised that the enforcement of absolute block in these special circumstances would seriously interfere with through movement, and exemption therefrom is not attended with undue risk at the slow speeds involved, provided that ordinary care is exercised. In this case the collision was due to a serious error by an experienced driver, and Brigadier Langley has no recommendation to make regarding the present method of station working.

BRITISH EUROPEAN AIRWAYS SUMMER SERVICES.—Several new routes will be operated by British European Airways this summer, and on some existing routes increased frequencies and faster schedules will be introduced. Among the new services will be return flights three times weekly between Glasgow and Paris *via* Manchester, from Manchester and Birmingham to Jersey, with connections for Dinard, and between Birmingham and Belfast. New services on existing routes will include non-stop flights between London and Rome, and additional services between London and Nice and London and Bordeaux. Increased frequencies will include 12 return flights daily on the London-Paris route, five of which will be at the £10 excursion rate for off-peak hours, and up to five daily flights between London and Dinard. Most of the new schedules will come into operation on April 16.

Institution of Railway Signal Engineers

Improved track circuit apparatus for London Transport lines

At a meeting of the Institution of Railway Signal Engineers in London on January 18, with the President, Mr. R. Dell, in the chair, a paper on the injector type of a.c. track-circuit, developed by the London Transport Executive Signal Department to obtain better shunting effects, was read by Mr. H. W. Hadaway. Lantern slides, showing vector diagrams and other information covering the operation of such track circuits under varying working conditions, illustrated the paper, which was followed by a demonstration made with the aid of an artificial track circuit, in working which the author was assisted by Mr. J. G. Smith, who had helped with the calculations given in the paper.

Mr. Hadaway discussed the general problem of the train shunt, as well as efforts to make it more reliable under varying conditions of weather, rail, and wheel surfaces, and outlined some steps taken on London Transport lines to cope with practical difficulties. These steps included the use of rain gauges, designed to prevent track circuits in the open being brought irregularly into the "occupied" condition by heavy rain falls, and to guard against the results of the "no failure" outlook on the part of the maintenance staff.

The injector track circuit, designed to circulate a reverse torque current in the relay track winding when the circuit is occupied by a train, was described and its electrical principles analysed. Different arrangements of apparatus and values of feed and other transformer windings were shown to illustrate the applicability of the method to special circumstances such as very long track circuit sections or locations where rail surface was likely to offer considerable resistance.

Discussion

The discussion was opened by Mr. E. G. Brentnall, who referred to the known method of using a phase control with double-element relays to produce a reverse relay torque. Conditions on the line varied greatly and had considerable influence on track-circuit operation. Tests he had made years ago showed that the apparent shunt varied considerably at low voltages, but at higher figures one seemed to get through the skin or film of resistance, and to arrive at actual ohmic figures. They had to have the voltage sufficient to pierce; with a.c. working a good voltage on the rails could be secured. A lineman might use a one-ohm resistance to shunt a relay, but that did not mean that the shunt was that value.

Mr. J. C. Kubale asked whether, if the ideas put forward had been worked out with special equipment, instead of being applied to standard relays, the result might not have been better. The arrangements appeared a little complicated. The bad features of the standard equipment and the good ones of the new seemed equally over-stressed and every location seemed to demand a fresh adjustment.

Mr. F. Burton said there appeared to be some possibility of failure if power could be cut off from the injector transformer, leaving the track winding of the relay with over-voltage. Possible interference from adjacent track-circuits seemed important when some of the voltages were taken into consideration. It would be interesting to know why this method was used.

Mr. J. E. Mott thought the comments of main-line signal engineers would be of interest and referred to the possibility of a disconnection adversely affecting the working. There also appeared to be a liability to difficulty arising from the use of a transformer at the feed end.

Mr. J. E. Candler could see no serious troubles, apart from wear, that increasing the return weight would have created. He thought it was considered dangerous to put a transformer in parallel with the ballast on electrified lines. It would be interesting to know what proportion of the London Transport track circuits had been equipped with the injector apparatus.

Mr. J. P. Coley considered that to secure a good train shunt a relay with a high percentage release was essential, and that meant the ratio between drop-away voltage and that required fully to compress the contacts, which was not quite what was usually meant by the term. The gravity return could be increased, but the injector track-circuit showed to advantage against that, as it increased the voltage without the current, but with increased weight the power needed was greater, and more current was necessitated. It was not necessary to worry about the injector transformer becoming disconnected, as that could be positively provided against, but there was, apparently, the possibility of a short circuit in it leading to an undesirable condition.

Mr. J. H. Currey said that the only way to improve the train shunt was to close up the gap between pick-up and drop-away; it was the pick-up that really settled the adjustment. It was useless to design a track circuit with a high train shunt under certain ballast conditions if it would become unsatisfactory when they deteriorated. It was the working margin that had to be allowed that really settled things, unless some means could be provided of reducing the margin; towards that several efforts had been made, as with d.c. circuits, by including resistances under one condition and cutting them out in another. The injector system seemed a convenient method of obtaining an improvement.

As regard poor rail-to-wheel resistance, he had been concerned in many experiments years ago, and it was found that if ordinary low voltages would not pierce, it was often necessary to go to something quite high to break down any film. In certain locations, such as damp and dirty tunnels, there were awkward conditions necessitating special arrangements, though they were not likely to be met with on London Transport lines.

Mr. H. W. Hadaway, replying, said the injector track-circuits, of which there were about 10, were in the open and had proved satisfactory. There were some 13 rain gauge equipments in service, also with good results. Track circuits had been kept working which would have otherwise failed in sudden rain storms.

EGYPT BUYS GERMAN RAILS.—A Reuter message states that the Egyptian State Railways have placed an order with Western German steel firms for the supply of 50,000 tons of rails valued at £(E)1,000,000. This order will be delivered under the existing Egyptian-German trade agreement.

Proposed Increase in Freight Charges

Evidence before the Consultative Committee concerning the application of the B.T.C. for increased dock charges

On February 7, members of the Transport Tribunal, sitting as a Consultative Committee under the chairmanship of Sir Bruce Thomas, K.C., resumed the hearing of the application by the British Transport Commission for an increase in railway rates and charges for merchandise by goods and passenger train, and in dock and canal charges. The inquiry into railway charges concluded on January 20.

Sir Bruce Thomas, on February 7, said that the Committee would now consider the B.T.C. application to increase by 16⅔ per cent. its present canal charges, to increase from 20 to 50 per cent. additional charges on the pre-war statutory dues on ships and goods in the case of coastwise vessels, and from 75 to 100 per cent. the additional charge on other pre-war statutory dues.

Mr. J. P. Graham, for the B.T.C., said they were concerned with 70 docks, which formed an important part, about 30 per cent., of British port facilities. These docks handled about 40 per cent. of all goods imported and exported. It had been said that the only reason they asked for an increase was because it had to preserve some sort of relativity with the railways case. That was not true. The B.T.C. thought that the docks should be dealt with as a separate matter.

Mr. Graham, continuing, said that docks were £1,000,000 short of paying their way, and waterways £500,000 short. The effect of the increase would be to add £900,000 to dock revenue and £100,000 to canal revenue, making a total of £1,000,000 extra. The increase, if granted, would wipe out the deficit on the docks which occurred before central charges were allocated.

It did not by any means help out the real deficit, however, which was some £4,000,000 on canals and waterways, and all the present increase could hope to do was to raise £1,000,000. Therefore, it could not be said that the effect of the present increase would bear unduly hard on dock and canal users.

In general, the present rate at these docks were lower than the rates at other docks, and, therefore, there could not be any question of the B.T.C. holding the public who used these docks up to ransom. The increase which it was hoped to obtain from canals during 1950 was something like £100,000, but the effect, at best, was only to put canals and waterways back to where they were in 1948.

Sir Robert Letch, Deputy Chairman of the Docks & Inland Waterways Executive, said that since the original statement to the Committee a new estimate for 1949 showed an increase in income of £200,000. It would also be necessary to increase the estimate for 1950 by the same amount, as it hoped for an increase of about 2,000,000 tons of coal and about 1,000,000 tons of crude oil through the docks. Unfortunately, this would make no difference to the net increase for the two years, owing to increased handling costs and other charges.

He did not think that any increase in charges would tend to divert goods to other docks. Since 1940, with the exception of 1944, when the ports were dealing with invasion traffic, there had been deficits in the docks now run by the B.T.C.

In the past two years there had been a substantial improvement in the turn-round of ships under the administration of the British Transport Commission. The turn-round was as fair a test as could be obtained. At every B.T.C. port there had been an increase up to 10 per cent. on the turn-round and in some places it had been better.

Mr. Graham: "It has been suggested by people who do not know what they are talking about that dock workers have not done as good a job as they might have done?"

Sir Robert Letch: "On the figures we have for ports under B.T.C. control there has undoubtedly been an increase in productivity in the last two years."

Dealing with suggestions by Hull fishing vessel owners that bulk charge increases would cause large numbers of trawlers to be laid up, Sir Robert Letch said that at Grimsby for every £1 of revenue, the B.T.C. spent between £1 14s. and £1 16s. for maintenance and operating costs. In Hull the position was slightly worse. Operating costs in connection with coal shipments far exceeded revenue and involved the Commission at present rates in substantial loss. Dues for coal in 1913 were 1d., and they had inherited that rate *plus* 60 per cent. for the first world war, and 75 per cent. for the second.

From a survey of traders using canals and from past experience the Commission realised that it would be unable to apply the proposed 16⅔ per cent. increase in all cases and still retain the traffic. The financial position of the canals justified an increase of much more than that proposed, but the B.T.C. knew that if it went beyond railway and other rates it would not retain the canal traffic. They hoped to retain the canal traffic even if it meant reducing rates in particular cases.

Mr. R. Adams, representing the

Speakers at the Permanent Way Dinner

Sir Cyril Hurcomb

Mr. J. C. L. Train

Sir William Slim

Sir Cyril Hurcomb, Chairman, British Transport Commission, proposing the toast of the Permanent Way Institution, at the annual dinner on January 28, to which Mr. J. C. L. Train, President, responded. On the right, Field-Marshal Sir William Slim is seen proposing the toast of the Permanent Way Man (see our February 3 issue)

Traders' Dock & Harbour Co-ordinating Committee, said: "We are jealous of the differential rate for coastwise traffic fixed in 1946. Has anything happened since to make the decision unsound?

Sir Robert Letch replied that the Commission wanted to keep the charges down, but it must get money from one source or another.

Mr. Adams suggested that £35,000 was a cheap price to pay for that general encouragement of coastwise shipping which might be lost if it were thought that the trend of charges were going against coastwise shipping.

Sir Robert Letch replied that he did not think the charges would seriously affect the existing trades and the Commission could not afford to reduce its estimates by £35,000.

Mr. Adams: It is a question of £35,000 hard cash for the B.T.C. or the moral stimulant that the differential fixed in 1946 and 1947 gave to coastwise shipping.

Sir Robert Letch was asked by Mr. E. S. Fay, for the British Electricity Authority, the largest single user of canals, if the canals were not losing traffic to the railways. Sir Robert replied: "Not entirely, but part of it."

The Commission adjourned until Wednesday.

Staff & Labour Matters

C.S.E.U. Claim Turned Down

The claim of the Confederation of Shipbuilding & Engineering Unions for a £1 a week increase was rejected on February 2 by the Engineering & Allied Employers' National Federation. The question of further steps to be taken, including reference to arbitration, will be dealt with at a meeting of the council of the C.S.E.U. on February 15. To the union statement that the increase could be met out of profits without an increase in production costs the employers replied that the unions had not taken into account depreciation and maintenance of plant, and the many overheads.

Sick Pay: London Transport Workers

The London Transport Executive has rejected a proposal by the T. & G.W.U. that London bus, tram, and trolleybus workers should receive pay during absence through sickness. It is understood that full pay was sought for the first 13 weeks and reduced pay thereafter. About 62,000 men are affected by the proposals. Some 500 London Transport road-service employees may at present receive sick pay under schemes taken over when certain undertakings were absorbed in 1933 by the L.P.T.B. The number is diminishing as these workers reach retiring age.

Industrial Court Award: Railway Shopmen

As recorded in our September 9, 1949, issue, the Industrial Court under Award No. 2226 of July 21, 1949, ruled that the Railway Executive introduce a grade for men who both examine and maintain cranes and lifting tackle, and that these men should enjoy a special differential rate to be negotiated with the employees' side of the R.S.N.C., either party to report to the Court failure to reach agreement on the differential rate within six weeks of the Award. The parties on December 5, 1949, notified to the Court their inability to agree and after a hearing on January 16 the Court awarded (Award No. 2247) that the special grade be known as Examiners (Cranes & Lifting Tackle) and that a rate of 3s. 6d. a week be paid in advance of the base rate for a Grade 1 Fitter, this Award to take effect from the beginning of the fourth pay week after January 18, 1950.

Piecework Rate Dispute

Over 6,000 shopmen at Doncaster Works and others at Bawtry on February 6 decided to do day-work only, with no piecework, in protest against new piece rates introduced by British Railways on February 3. The new rates were agreed by the N.U.R. and C.S.E.U. in May, 1948; they provide for piecework prices to yield an average of not less than 27½ per cent. above basic rates, which, it is claimed, would reduce weekly earnings by as much as £1. No complaints have been received from other shops where the new rates apply.

British Railways Regional Revision

Adjustments to boundaries

The Railway Executive, with the concurrence of the B.T.C., is making certain adjustments to the boundaries of the six Regions which comprise British Railways. These adjustments, to come into operation on April 2, are being made with the object of simplifying supervision, reducing administrative costs, and avoiding unnecessary duplication.

The lines involved are those which at present penetrate from one Region into the boundary of another and which can with advantage be transferred into the Region to which they more logically belong. The lines or stations which formerly belonged jointly to two or more of the former railway companies will in each case now be placed under the administration of a single region. Each member of the staff concerned is being advised personally how he will be affected by the adjustments.

The principal changes are as follow:—

Eastern Region to London Midland Region
Mill Hill to Edgware
Hill End to St. Albans London Road
Harpenden East (Herts.) to Dunstable
The former Great Central line: Quainton Road (Bucks.) (exclusive) and Ashendon Junction (Bucks.) (exclusive) to Heath (Derbyshire) (exclusive)
Marefield Junction (Leicestershire) to Leicester Belgrave Road
All former L.N.E.R. lines in the region of Nottingham and Derby west of Netherfield, Leen Valley, Bilsthorpe, and including Pleasley and Mansfield Central
Hazlehead Bridge to Manchester London Road and to Manchester Central *via* Fairfield Junction and Levenshulme South
Metropolitan & Great Central line: Rickmansworth (inclusive) to Quainton Road (Bucks.) and Verney Junction (Bucks)

Eastern Region to London Transport Executive
Metropolitan & Great Central line: Harrow to Rickmansworth (exclusive) and Watford

Eastern Region to North-Eastern Region
The former Great Central and Great Northern lines north of Barnsley (Old Mill Lane)—Mexborough—Doncaster

Eastern Region to Western Region
Marylebone to Northolt Junction
Neasden to Harrow (exclusive)

London Midland Region to Eastern Region
Willington (Bedfordshire) to Cambridge
Raunds (Northants) to Huntingdon
Thorpe (Northants) to Peterborough
Wakerley (Northants) to Wansford
Morcott (Rutland) to Peterborough
Edmondthorpe (Lincolnshire) to Little Bytham (Lincolnshire)
Carlton & Netherfield (Notts.) to Lincoln Whitefriars
Farnsfield (Notts.) to Rolleston (Notts.)
Shirebrook West (Derbyshire) to Shireoaks (Notts)
All former L.M.S.R. lines north and east of Hasland, Dore & Totley, Sheffield and Barnsley

London Midland Region to North Eastern Region
All former L.M.S.R. lines north of Penistone, Darfield, and Denaby, and east of Diggle, Eastwood, and Skipton

To North Eastern Region
The line Shaftholme Junction (Yorkshire) to Knottingley (Yorkshire)

London Midland Region to Western Region
Hadley Junction (Shropshire) to Coalport
All former L.M.S.R. lines south-west of Selly Oak to Bath and Bristol (including branches) and Broom to Byfield (Northants) (exclusive)
Warwick Milverton Station
Leamington Spa Avenue Station
Banbury Merton Street Station
Bicester to Oxford

North Eastern Region to London Midland Region
Kirkby Stephen East to Appleby and Clifton Moor
Kirkby Stephen East to Tebay

Southern Region to Western Region
Cole (Somerset) to Bath, including Bridgwater Burnham and Wells branches
All former Southern Railway lines west of Exeter, Cowley Bridge Junction

Western Region to London Midland Region
Crudgington to Nantwich

Western Region to Southern Region
Thornfalcon (Somerset) to Chard Central
Thorney & Kingsbury Halt (Somerset) to Yeovil
Sparkford (Somerset) to Weymouth, including Bridport, Abbotsbury, and Easton branches (Dorset)
Grafton & Burbage (Wiltshire) to Andover Junction, including Tidworth branch
Newbury (exclusive) to Winchester Chesil
Reading West (exclusive) to Basingstoke branch
Westbury (exclusive) to Salisbury

Northern Counties Committee Services

The Ulster Transport Authority, whose first annual report is referred to elsewhere in this issue, has issued a statement on proposals in regard to transport services in areas through which the Northern Counties Committee railway runs.

This states that investigations have been made to ascertain what, if any, services are redundant and wasteful. From these investigations it would appear to be inevitable that certain of the railway services will have to be discontinued.

It is proposed to make the following changes as quickly as possible:—

Cookstown Junction to Cookstown, retained for goods traffic only; Magherafelt to Draperstown, closed to all traffic; Magherafelt to Upperlands, retained for goods traffic only; Upperlands to Macfin, closed to all traffic; Limavady Junction to Limavady, retained for goods traffic only; Limavady to Dungiven, closed to all traffic; Ballymoney to Ballycastle, closed to all traffic; Kingsbog Junction to Ballyclare, closed to all traffic.

It is considered that the traffic carried on these sections of the railway can with equal efficiency be carried more economically by an expansion of the already considerable road services.

So far as the line from Cookstown Junction to Cookstown is concerned, however, although it is proposed to announce that it will be kept for freight traffic only, a scheme is being developed to see whether by providing an improved rail passenger service between Belfast and Magherafelt, and an altered road passenger service in the district round Magherafelt, using Magherafelt as a railhead, the line between Cookstown Junction and Magherafelt can continue to be used for rail passenger services.

Letters have been forwarded to all the county councils, urban district councils, and rural district councils in the areas affected, and it is hoped that by mutual discussion changes can be made by agreement rather than by having recourse to the procedure involved by an appearance before the Tribunal.

Notes and News

Rails and Fishplates for Pakistan.—The High Commissioner for Pakistan invites tenders for the supply of approximately 7,930 tons of rails and 609 tons of fishplates. See Official Notices on page 175.

Assistant Storekeeper Required.—An assistant storekeeper is required by the Government of Nigeria for (a) Public Works Department and (b) Railway Department, for one tour of 18 to 24 months, with prospect of permanency. See Official Notices on page 175.

French Tourists' Allowance.—The Exchange Control Office will henceforth allow French tourists to Britain and to Belgium to take out in local currency the equivalent of fr. 50,000, or about £50. The allowance hitherto has been only fr. 10,000.

Vacancies on the Nigerian Railway.—Two district engineers are required by the Nigerian Railway. The duties of the appointment are to direct and supervise the maintenance of way and works on a district of 450 to 950 route miles and to plan, supervise and direct under the chief engineer, the construction of new works or renewals in the district. See Official Notices on page 175.

L.M.R. Society Musical Play.—On February 1 the London Midland Region Amateur Musical Society presented the musical play "Good Night Vienna" before a large audience, in which were many traders and other friends of the Region as well as officers from all Regions of British Railways. A very appreciative reception was accorded an excellently produced and extremely well executed performance. The chorus work was particularly praiseworthy and the leading characters were admirably portrayed by Miss Doreen Knight, Miss Eileen Paul, Miss Ursula Davies, and Messrs. Dick Glanville and Percy Fleet. After the performance Mr. John Elliott, Chief Regional Officer, complimented the cast on the excellence of the performance and welcomed the guests of the Region.

R.H.A. Autumn Conference.—The Road Haulage Association is making arrangements for a conference to be held in Scarborough from September 20 to 22 inclusive. Further particulars will be made available in due course.

Agreed Charges.—Applications for the approval of 110 further agreed charges under the provisions of section 37 of the Road & Rail Traffic Act, 1933, have been lodged with the Transport Tribunal. Notices of objection must be lodged on or before February 14 next.

Dalmeny Station to be Closed on Sundays.—As from Sunday, February 12, Dalmeny Station, Scottish Region, will be closed on Sundays and this arrangement will continue until the introduction of the summer timetable. During the period Dalmeny Station is closed, passengers who would have changed trains at Dalmeny will change at Inverkeithing.

Debate at East Croydon.—The debate on the subject "That the steam locomotive has had its day," which has been arranged by British Railways, Southern Region, Lecture & Debating Society, at the Social Club, East Croydon Station, will take place on February 28. The meeting will commence at 6.30 p.m. and Mr. H. B. Taylor, Assistant Operating Superintendent, Southern Region, will be in the chair.

Collision at East Shalford Level Crossing.—At 12.11 p.m. on February 1 the 8.58 a.m. train from Ramsgate to Birkenhead came into collision with a small motorcar at East Shalford occupation crossing, about three-quarters of a mile from Shalford Station, Southern Region. The motorcar was carried about 30 ft. along the track before it became disentangled and both its occupants were killed. The inquest on the two persons killed was held at Godalming on February 6 and the jury, who returned a verdict of accidental death, added a rider that it was not satisfied with the system of signalling between the signal box and the crossing keeper. Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport, opened the enquiry into the accident on Wednesday, February 8, at the Lion Hotel, Guildford.

Launching of S.S. "Amsterdam."—Among those present at the launching at Clydebank on January 19 of the British Railways vessel S.S. *Amsterdam* was Mr. A. J. White, Assistant Chief Regional Officer, British Railways, Eastern Region, whose name was not included in the account given in our January 27 issue.

Institution of Locomotive Engineers.—Mr. G. H. Lund will read a paper on "Railway Breakdown and Re-Railing Equipment" before the Institution of Locomotive Engineers on February 22. The meeting will be held at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m.

Tube Train in Collision with Tree.—On February 2, a London Transport Northern Line tube train bound for Barnet was in collision with a tree which had been blown across the track between East Finchley and Finchley Central Stations during a gale. The impact stalled the train and it was pushed into Finchley Central Station by another train; there were no casualties.

Railway Benevolent Institution.—At a meeting of the Railway Benevolent Institution on January 25, the board granted annuities to ten widows and ten members amounting to £306 4s. a year, and one funeral gratuity of £10, and authorised 54 grants amounting to £492 2s. from the special benevolent fund in cases of immediate necessity. Grants made from the casualty fund during December, 1949, amounted to £806 11s. 6d.

G.N.R.(I.) Staff Club Opened.—Mr. G. B. Howden, General Manager, Great Northern Railway (Ireland), officially opened a staff social club at Amiens Street Station on February 1. The club premises, which have been disused for a number of years, have been made available rent free, but the formation of the club was made possible by the work of a committee which has organised social functions during the past two years to raise the necessary funds. Mr. Howden praised the efforts of the staff and said the venture had the wholehearted support of the management. Mr. P. H. Patterson, Accountant, who is president of the club, thanked Mr. Howden and the board for the facilities afforded. A concert by members of the staff was given later in the evening and was followed by a dance.

2,000th North British Locomotive for South Africa.—On February 1, the 2,000th locomotive built by the North British Locomotive Co. Ltd. for the South African Railways, one of the locomotives of the "24" class, described in *The Railway Gazette* of May 27, 1949, was ceremoniously named *Bartholomew Diaz*, in honour of the Portuguese navigator who rounded the Cape in the fifteenth century. Mr. Paul Sauer, South African Minister of Transport, said that the company had built 100 locomotives of this

British Railways Gas-Turbine Locomotive

Gas-turbine locomotive built by Brown-Boveri of Switzerland, for the Western Region of British Railways on arrival at Harwich on February 3

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

LONDON Firm of Engineers and Agents with 30 years' experience of handling Contracts with leading Railway Authorities and Consulting Engineers would welcome two additional agencies for reputable manufacturers of Railway specialities who need an efficient London Office.—Box 607, c/o *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE High Commissioner for Pakistan invites tenders for the supply of approx. 7,930 tons of Rails and 609 tons of Fishplates.

Forms of tender, which are returnable by March 14, 1950, may be obtained from the Commercial Secretary (Supply), Supply & Stores Dept., 39/40, Lowndes Square, S.W.1, on payment of a fee of 5s. per set (not returnable). The ref. S.S.3294 should be quoted on all applications for forms.

THE EVOLUTION OF RAILWAYS. Second edition, revised and enlarged. By Charles E. Lee. Traces the germ of railways back to Babylonian times. Cloth, 8½ in. by 5½ in. 72 pp. Illustrated. 6s. By post 6s. 4d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE WORK OF THE RAILWAY CLEARING HOUSE, 1842-1942. An account of the development and extent of the activities of this famous British railway institution. Paper, 9½ in. by 6 in. 24 pp. Illustrations. 2s. 6d. By post 2s. 8d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

His Majesty's Colonial Service

NIGERIA

VACANCIES exist for two District Engineers in the Nigerian Railway. The duties of the appointment are to direct and supervise the maintenance of way and works on a district of 450 to 950 route miles and to plan, supervise and direct under the Chief Engineer, the construction of new works or renewals in the district and to undertake any other duties which the General Manager may direct. Appointments will be on contract, for one tour in the first instance, at a salary of £1,300 per annum plus expatriation pay (which is payable in the Colony and on leave) at the rate of £400 per annum. Other conditions of service include: free first class passages for the officer and his wife once each way each tour; furnished quarters provided at a rent of £150 per annum (a rent remittance is allowed if quarters are unfurnished); travelling and transport allowances in accordance with the Colony General Orders; leave on full pay at the rate of 7 days in the United Kingdom for each month of resident service; tours of 18 months approximately; a gratuity, at the rate of £37 10s. for each 3 months of service, including leaves, is payable on the satisfactory termination of the contract. At current Nigerian rates for income tax, a single man would pay £240 per annum approximately and a married man about £165 per annum. The normal upper age limit for permanent appointments is 40, but candidates over this age may be considered for these contract appointments. Compulsory retiring age is normally 55. Candidates must be corporate members of the Institution of Civil Engineers and have at least ten years' experience of maintenance of railway permanent works. They should write forthwith for a form of application to the DIRECTOR OF RECRUITMENT (COLONIAL SERVICE), COLONIAL OFFICE, Sanctuary Buildings, Great Smith Street, S.W.1, quoting reference No. 27333/30 and giving brief particulars of age, qualifications, and experience.

Crown Agents for the Colonies

ASSISTANT STOREKEEPER required by the Government of Nigeria for (*a*) Public Works Department and (*b*) Railway Department, for one tour of 18-24 months, with prospect of permanency. Commencing salary according to age, qualifications and experience in the scale £660 rising to £970 a year (including expatriation pay). Outfit allowance £60. Free passages and liberal leave on full salary. Candidates under 35 years of age must have had for (*a*) 4 to 5 years storekeeping experience either with building or engineering contractors or in a Government Public Works Stores and have a knowledge of accounting; and for (*b*) good experience of railway stores, including Mechanical, Civil Engineering and general railway materials and have an aptitude for office work. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting for (*a*) M/N/25224/3C and for (*b*) M/N/25397/3E on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

RAILWAY STORE METHODS. By W. H. Jarvis, Great Western Railway. The necessity for training officers—Organisation of stores department—Stores accounts. Cloth, 7½ in. by 5 in. 116 pp. With diagrams. 4s. By post 4s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

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class for the S.A.R. and he welcomed its decision to consider establishing a plant in the Union. Any British undertaking setting up works in South Africa would be welcome, and it would receive most sympathetic treatment from the Government. Mr. W. D. Lorimer, Managing Director, North British Locomotive Co. Ltd., was present at the ceremony. Sir Andrew Duncan, another Director, is at present in South Africa.

London Midland & Scottish Stock Conversion Trust.—Pursuant to an order of the Court, the London Midland & Scottish Stock Conversion Trust is being wound up, and forms to enable holders to receive the appropriate amounts of British Transport 3 per cent. guaranteed stock, 1978-88, to which they are entitled are being dispatched today (February 10). The trustees are paying, on February 28, a final dividend on the 4 per cent. non-cumulative preference stock of £3 0s. 8·3d. per £100 stock.

Non-Stop Refreshment Service on the "Irish Mail."—Passengers travelling to and from Ireland by the 8.40 p.m. from Euston and 12.55 a.m. from Holyhead are now able to obtain light refreshments throughout the night from a special pantry service. Passengers are not required to visit the pantry as staff call at each compartment. Passengers can also ring for service. Two third class compartments in a coach on each of the trains forming the Irish Mail have been fitted up as a pantry. The new service began on February 6.

Scottish Seed Potato Traffic.—From the opening of the current season until December 31, 1949, 177,852 tons of seed potatoes had been loaded at stations in Scotland for despatch to the South; compared with 1948-49 this figure represents an increase of 16·1 per cent. It is estimated that 200,000 tons of seed potatoes have yet to be forwarded and by the end of the season the total quantity of seed potatoes despatched from Scotland will represent a user of approximately 60,000 wagons. The bulk of the traffic is being handled at stations in Fife, Perthshire, Angus and The Mearns. Wagons are marshalled into full train loads at certain centres in Scotland and forwarded to the South for distribution from Boston, Spalding, Grimsby, Lincoln, Peterborough, York and other points. An interesting feature of the present season has been the despatch of four train-loads, in fully-fitted vehicles, from Fraserburgh to Southampton Docks, for shipment to South Africa.

Institution of Electrical Engineers.—The annual dinner of the Institution of Electrical Engineers will be held on February 23, at 7 for 7.30 p.m., at the Connaught Rooms, Great Queen Street, London, W.C.2.

North British Locomotives for Victoria.—An order for 20 Class "R" 4-6-4 locomotives, valued at over £500,000, has been placed by the North British Locomotive Co. Ltd. by the Victorian Railways. The order is an extension of an earlier order for 50 such engines which are for main line service. Each of the locomotives in the recent order will cost £29,000.

Channel Islands Sailing Tickets.—Sailing tickets will be required for journeys to, or from, the Channel Islands on the following days during the summer, this year:

To the Channel Islands

Southampton route—
Fridays, May 19 to September 22
Saturdays, June 10 to September 16
Weymouth route—
Saturdays, May 27 to September 23

From the Channel Islands

Southampton route—
Saturdays, June 3 to September 30
Weymouth route—
Saturdays, June 10 to September 30

Sailing tickets for both outward and homeward journeys to and from the Channel Islands have been obtainable at the Continental Enquiry Office, Victoria Station, for the Southampton route, and Central Enquiry Bureau, Paddington Station, for the Weymouth route, on and from February 1. Cabins and berths on the night steamers to and from the Channel Islands will also be reserved at these offices. On Saturdays, from July 15 to September 2 sailing tickets will be required for travel by the 7.15 a.m. steamer from Guernsey to Jersey, and should be obtained in advance from British Railways' Office, The Jetty, St. Peter Port, Guernsey.

Lincolnshire Road Transport Concern Taken Over.—A provisional agreement has been reached between the British Transport Commission and Enterprise (Scunthorpe) Passenger Services Limited, whereby the B.T.C. will acquire the business as from the end of this month. The undertaking will be operated on behalf of the Commission by the Lincolnshire Road Car Company, which is already owned by the B.T.C.

Reorganisation of Travel Association.—At a meeting of the general committee of the Travel Association on January 26 a resolution was passed recommending the integration of the Travel Association and the British Tourist & Holidays Board and the acceptance of amendments to the memorandum and articles of association to give effect to this decision. An extraordinary general meeting of members of the Association to consider these proposals will be held in London on March 9.

Course for Goods Station and Cartage Supervisors.—A residential course of instruction on goods station working, and associated cartage operations was held at Ayr, Scottish Region, from January 9 to 13. The curriculum included the study of: goods station working, with particular reference to the development of modernised methods; cartage operations and costs, mechanical and non-mechanical, as affecting freight terminal station working; claims prevention; development and use of palletisation methods in the handling and transit of freight traffic. Mr. Cameron, Chief Regional Officer, Scottish Region, visited the school and indicated that the course offered a unique opportunity for the study and discussion of all aspects of goods station and cartage work and an exchange of ideas on the subject, in an atmosphere of friendly co-operation. The introductory lecture was given by Mr. L. E. Marr, Assistant Commercial

Superintendent, Scottish Region, who, in outlining the purpose of the course, stressed the need for greater appreciation of the many present day problems concerned with the subject. Mr. L. Meara, Road Transport Controller, and Mr. C. Anstall, Assistant (Freight Working) to the Commercial Superintendent, were closely identified with the training and direction of studies; Mr. W. H. Glossop, Education Officer, Railway Executive, also visited the school.

Forthcoming Meetings

February 10 (*Fri.*).—Institute of Transport, East Midlands Section, at the School of Transport, Derby, at 6.30 p.m. "Railway Public Relations," by Mr. D. S. M. Barrie, Public Relations Officer, Railway Executive.

February 11 (*Sat.*).—British Railways, Southern Region, Lecture & Debating Society. Visit to G.P.O. King Edward Building, Post Office railway and sorting office.

February 13 (*Mon.*).—Institute of Traffic Administration, Birmingham Centre, at the Crown Hotel, Corporation Street, Birmingham, at 7 p.m. Sound film: "Main-Line Diesels, and Men of the Footplate."

February 14 (*Tue.*).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. "Some Factors Governing the Performance of Crankcase Lubricating Oils," by Mr. A. Towle.

February 14 (*Tue.*).—Institution of Civil Engineers, Great George Street, Westminster, S.W.1, at 5.30 p.m. "Welded Bridges," by Mr. R. G. Braithwaite and Mr. D. J. Davies.

February 14 (*Tue.*).—Institute of Transport, Metropolitan Section, Guildford & District Group, at Warwick Hotel, Station Road, Redhill, at 6.30 for 7 p.m. Discussion: "How should cross-country traffic be handled? Road or rail?" initiated by Mr. H. W. Damon.

February 15 (*Wed.*).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas' Street, London, S.E.1, at 5.45 p.m. "Continental Traffic," by Mr. R. E. Sinfield, Continental Superintendent, Southern Region.

February 15 (*Wed.*).—Institute of Traffic Administration, at Caxton Hall, Westminster, S.W.1, at 7 p.m. Discussion: "Outline of draft charges proposals."

February 16 (*Thu.*).—Diesel Engine Users' Association, at Caxton Hall, Westminster, S.W.1, at 2.30 p.m. Informal discussion on operating problems.

February 16 (*Thu.*).—British Railways, Western Region, London Lecture & Debating Society, in the Clerks' Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. "The Work of a Large Passenger Station," by Mr. W. T. Geden, Stationmaster, Paddington.

February 17 (*Fri.*).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. "Simplification Creates New Problems for Top Management," by Mr. H. E. Merritt.

February 17 (*Fri.*).—Institution of Railway Signal Engineers, at the London Transport Executive Signal School, Earls Court Station, S.W.5, at 6.15 p.m. "Typical Signal Control Circuits," by Mr. J. P. Loosemore.

Railway Stock Market

General election uncertainties have made for further contraction of business on the Stock Exchange, where sentiment was also affected by the small premium of 5s. on the new Southern Rhodesia loan, instead of the £1 premium expected. The reaction in British Funds influenced other sections of markets, and industrial shares showed moderate declines, although in most cases they were not more than a few pence. Apart from general recognition that until the election result is known it is impossible to assess the outlook for markets it is realised also that the April Budget looms ahead. Another factor making for caution is the big batch of important new issues planned during the next few weeks. South Africa is expected to borrow a further £10,000,000 in London, while loans are also expected to be raised by Uganda and Kenya, and industrial issues possible before the Budget are likely to total several millions.

Despite the further decline of business in markets there has been rather more activity in foreign rails. It is being pointed out that all the Leopoldina stocks, and also Great Western of Brazil shares, and La Guaira stocks, are likely to prove undervalued at current prices. It is realised, however, that it may be six months or more before the "pay-outs" are finally made to stockholders. Sooner or later, however, there seems likely to be considerable activity in these and other railway stocks scheduled for take-over. The recent revival in Taltal shares, which have again changed hands around 17s. 6d., has been accompanied by renewed talk of possible take-over news, although there is no official confirmation.

There was a fair amount of business around 76½ in La Guaira ordinary stock and Bolivar "C" debentures marked 54½. Costa Rica 6½ per cent. debentures changed hands at 22 and Mexican Railway 6 per cent. debentures at 53. Brazil Railway gold bonds were 42½. In other directions Antofagasta were dealt in around 8 and the preference stock strengthened to 46. Leopoldina at 9⅛ failed to hold all an earlier improvement and the preference stock at 26¼ also reflected some profit-taking after an earlier rise. Leopoldina 4 per cent. debentures were 91, and the 6½ per cent. debentures 127½, while Leopoldina Terminal debentures were 98 and the ordinary units 2s. 6d. Great Western of Brazil, which attracted renewed demand, rose sharply to 133s. 7½d. San Paulo 10s. units changed hands around 14s. 4½d.

After various rumours, denial from Havana that take-over terms had been agreed put United of Havana stocks down sharply, particularly the 1906 debentures, which at the time of writing have come back to 25¾. Canadian Pacifics remained active around 28½, the market now displaying confidence that the dividend is likely to be maintained, and even talking of possibilities of a higher payment next year, though the latter would seem improbable unless there is an increase in freight rates.

Road Transport shares kept very quiet with Southdown at 125s., Maidstone & District 90s., Potteries Traction 52s., Lancashire Transport 83s., and West Riding 66s. B.E.T. deferred stock attracted after its recent fall and rallied to £480. Firmness in road transport shares reflects the belief that prospects of dividends being maintained are good and that the outcome of the General Election will finally decide whether there are to be further acquisitions by British Transport. It is being pointed out that even if there were more acquisitions current market prices would seem to be below probable take-over terms. Iron and steel shares continue several shillings below their official take-over levels; nevertheless, leading iron and steel companies are expected in the market to maintain their dividends this year. Yields are attractive on this basis and in the circumstances it is perhaps not surprising that prices are tending to strengthen. Firth Brown have rallied sharply to 71s. 3d., Colvilles were firmer at 35s. 1½d., Hadfields improved to 27s., and United Steel were 26s. 4½d.

Movements in locomotive building and engineering shares generally were small although a little selling put back Hurst Nelson to 58s. 6d. at Glasgow. Vulcans were steady at 18s. 6d., with Beyer Peacock at 19s. 1½d. and North British Locomotive 19s. 6d., while Gloucester Wagon kept at the lower level of 48s. 9d. recently recorded. Wagon Repairs at 16s. 4½d. were steady.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1947/48	No. of week	Aggregate traffics to date: Total 1948/49	Aggregate traffics to date: Increase or decrease
South & Central America	Antofagasta... ...	811	29.1.50	£ 68.060	+ £ 1,150	4	£ 288,034	+ £ 16,800
	Costa Rica	281	Dec., 1949	c357,783	— c617,400	26	c5,155,862	— c917,757
	Dorada	70	Nov., 1949	23,909	— 8,758	48	320,787	+ 14,879
	Inter. Ctl. Amer. ...	794	Dec., 1949	$1,259,960	+ $91,260	52	$12,395,066	— $938,884
	La Guaira	22¾	Jan., 1950	$78,562	— $31,734	4	$78,562	— $31,734
	Nitrate	382	31.1.50	25,060	+ 9,872	4	46,287	+ 16,034
	Paraguay Cent. ...	274	27.1.50	₲135,602	+ ₲32,806	30	₲4,276,868	+ ₲1,144,267
	Peru Corp. ...	1,050	Dec., 1949	$6,786,200	+ $2,633,399	26	$33,795,958	+ $11,248,5277
	,, (Bolivian Section)	66	Dec., 1949	Bs.10,712,000	+ Bs.2,677,768	22	Bs.62,869,164	+ Bs.10,973,05
	Salvador	100	Oct., 1949	c68,000	— c14,000	17	c313,000	— c16,000
	Taltal	154	Dec., 1949	14,725	+ 5,825	26	75,705	+ 28,285
Canada	Canadian National†	23,473	Dec., 1949	15,090,000	+ 83,000	52	166,908,000	+ 3,151,000
	Canadian Pacific† ...	17,037	Dec., 1949	10,039,000	— 320,000	52	151,084,000	+ 2,667,000
Various	Barsi Light* ...	167	Dec., 1949	28,928	+ 4,425	39	267,533	+ 19,875
	Egyptian Delta ...	607	31.12.49	21,537	— 2,154	39	513,033	— 43,593
	Gold Coast ...	536	Nov., 1949	271,799	+ 32,376	36	1,894,985	+ 246,278
	Mid. of W. Australia	277	Nov., 1949	31,973	+ 1,942	22	141,839	— 1,905
	Nigeria	1,900	Oct., 1949	632,907	+ 115,113	30	3,360,709	+ 216,792
	South Africa ...	13,347	14.1.50	1,414,990	+ 34,767	41	60,969,023	+ 5,072,462
	Victoria	4,744	Oct., 1949	1,792,078	+ 371,156	17	—	—

* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at $3 to £1